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SEISMICITY OF CALIFORNIA 1900-1931

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CALIFORNIA DIVISION OF MINES AND GEOLOGY

SPECIAL REPORT 135

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Special Report 135

SEISMICITY OF CALIFORNIA 1900–1931

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ABSTRACT

Basic data are presented for the 517 earthquakes of magnitude 4 and greater or intensity V and greater that are known to have occurred from 1900 through 1931 within California and a 100-kilometer zone surrounding the state. Released for the first time in this report are estimates of 261 epicenter locations, 168 values of magnitude, 67 values of maximum reported intensity, and the approximate sizes of 61 areas of perceptibility. These estimates were based mainly on reported earthquake effects.

The only event of magnitude 8 or greater since 1900 was the San Francisco earthquake of 1906. Between 1900 and 1931, three other events had magnitudes of 7 or greater, and a total of twenty-four events had magnitudes of 6 or greater.

The most seismically active part of the state from 1900 through 1931 was along the southern and central San Andreas fault system. Strong earthquakes occurred in the Cape Mendocino area, and a broad zone of seismicity extended from the Cape inland to Nevada between latitudes 39° N and 41° N. A zone of seismicity bounded the eastern front of the Sierra Nevada and earthquakes also occurred within the Sierra block. The least seismically active portions of the state between 1900 and 1931 were the Great Valley south of latitude 39° N and the eastern part of the Mojave Desert near the Colorado River.

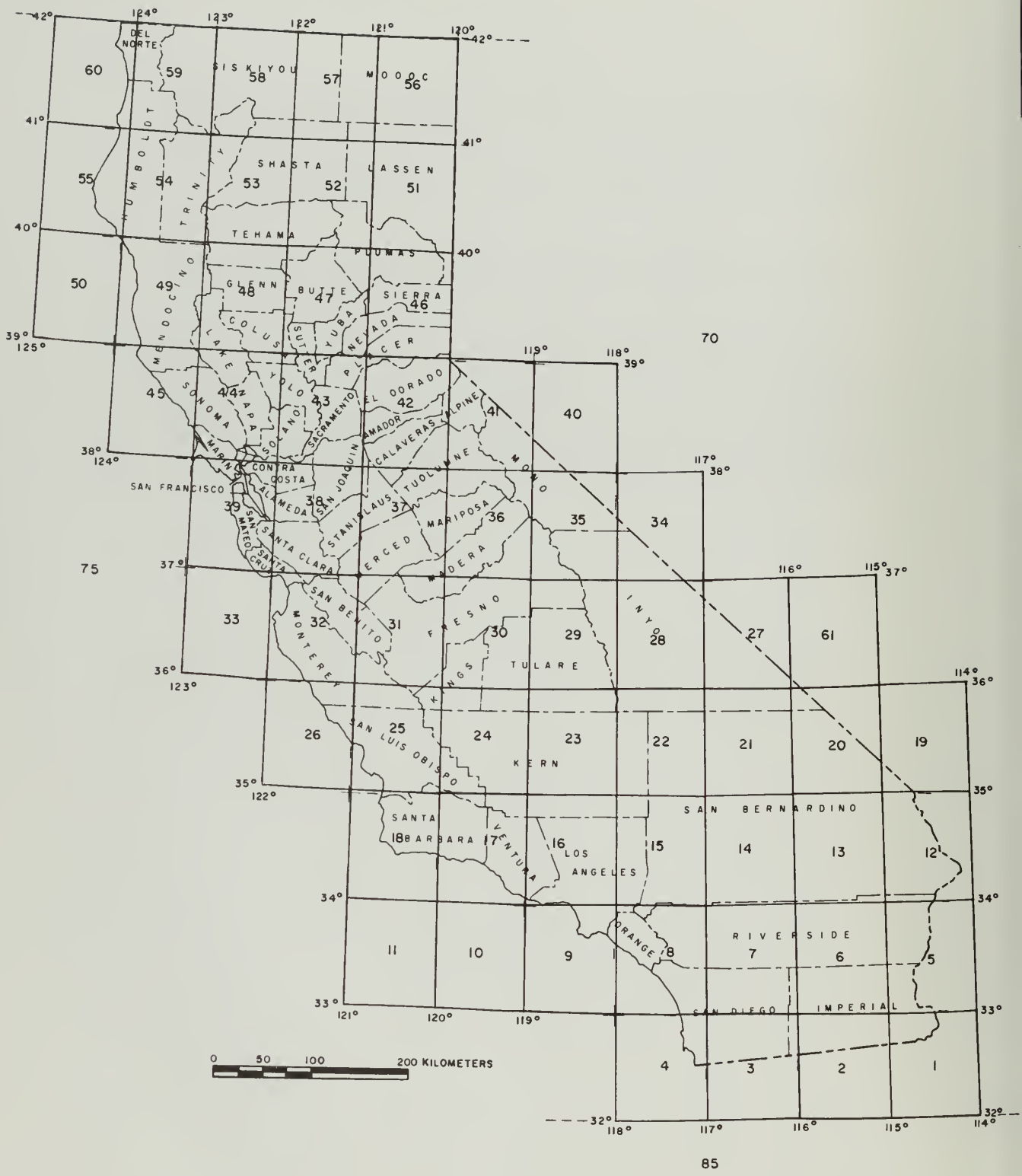

Figure 1. Index map of Califarnia showing the 1-degree-by-1-degree numbered regians and the caunties.

SEISMICITY OF CALIFORNIA 1900–1931

By Tousson R. Toppozada, David L. Parke and Chris T. Higgins

INTRODUCTION

The California Division of Mines and Geology (CDMG) is compiling a computerized earthquake catalog for the State of California that begins with the earliest known records in 1769. The University of California at Berkeley (UCB) has published an earthquake catalog for northern California that covers the time interval 1910 through 1972 (Bolt and Miller, 1975). The California Institute of Technology (CIT) has published earthquake catalogs for southern California that cover the time intervals 1932 through 1972 (Hileman *et al.,* 1973), and 1973 through 1974 (Friedman *et al.,* 1976). Published information about earthquakes which occurred before 1932 in southern California and before 1910 throughout the state is limited to descriptive accounts that give little quantitative information.

The CDMG earthquake catalog provides a unified source for the seismicity data of the entire state covering the known historical period. It records the time, location, and size of earthquakes that had epicenters or effects in California. This information is essential for evaluating relative earthquake risk in different parts of the state. The CDMG catalog is a merger of the UCB and CIT catalogs for the time period starting in 1932, when seismographic coverage over the whole state was first established, with refinements mainly from data published by the University of Nevada at Reno (UNR) and the United States Geological Survey (USGS). During the dominantly pre–instrumental period before 1932, the CDMG catalog is based on descriptive catalogs such as that of Townley and Allen (1939) and on other sources of information such as newspaper files and technical literature on seismology. The catalog provides references for the source of information for each of the earthquake properties listed, such as epicentral location, magnitude, and intensity. CDMG welcomes information which may further improve the knowledge of the events listed in the catalog.

The earthquake catalog is being assembled, stored, and maintained as a series of data files on computer magnetic tape. When complete, the computer output will be available to the public in the form of magnetic tapes, microfiche listings, and printed reports covering different time intervals, and published epicenter maps.

Because earthquake catalogs for northern California (UCB) and for southern California (CIT) are available from 1932 onwards, CDMG directed its effort primarily to analyzing and cataloguing the significant earthquakes which occurred before 1932. The present report covers the time interval 1 January 1900 through 31 December 1931.

Acknowledgments

The California earthquake catalog project, of which this is the first product, was initiated in 1972 by Roger W. Greensfelder and continued with the help of Roger W. Sherburne. Their contributions and those of their co–workers are greatly appreciated. Marcella Hanson of the Department of Conservation and Donald A. Rodgers designed the computer system for data storage and retrieval. The original computer programs were written at the San Quentin data center. Donald A. Rodgers wrote the Fortran program used in plotting the epicenters, and Charles R. Real expanded it to distinguish different values of intensity as well as magnitude. The Office of Management Analysis in the Department of Conservation, especially Nancy Klamm, assisted with the computer handling and listing of the data. Christine Hansen, student intern from the University of California, Davis, assisted in the final stages of checking the tables. Charles G. Bufe of the U.S. Geological Survey critically read the report and offered helpful suggestions.

EARTHQUAKE DATA

Only those earthquakes of reported Richter magnitudes 4 and greater or intensities V and greater (Modified Mercalli or Rossi Forel scales) are presented in this report. Because intensity V is the threshold of damage (see Appendix D), all the earthquakes presented in this report were at least mildly damaging or potentially so. Smaller earthquakes were excluded from the present report because they were reported only from the densely populated areas and added little new knowledge to the statewide seismicity. In addition, because information concerning

these smaller events was scarce, it was not possible to determine their magnitudes and locations with any confidence.

Table 1 summarizes CDMG's determinations of the earthquake parameters for the period from 1900 through 1931. It gives the number of epicentral locations, Richter magnitudes, maximum reported intensities, and areas of perceptibility determined by CDMG and presented for the first time in this report. The main CDMG contribution to clarifying the seismicity picture for this 32–year period was in determining epicenter locations for 50% of the earthquakes and in determining 73% of the values of magnitude listed in this report. No claim is made that all earthquakes larger than the threshold ($M \geqslant 4$, or $I \geqslant V$) have been identified and included in this report, or that the information presented for the earthquakes that are included is necessarily complete. Additional research of the historical record may improve some of the information presented here; nevertheless, earthquakes of magnitude 4 or greater that occurred in remote areas may still go undetected or may be reported with insufficient detail to estimate their true magnitudes.

Table 1. CDMG's Contribution to Earthquake Parameters, 1900–1931.

	Epicenter	*Magnitude*	*Intensity*	*Area*
Total parameters listed	517	229	495	134
Parameters estimated by CDMG	261	168	67	61
Percentage estimated by CDMG	50%	73%	14%	46%

The main sources of data for the earthquakes listed in this report are:

(a) UCB catalog (Bolt and Miller, 1975) for northern California from 1910 through 1931;

(b) *Earthquake History of the United States* (Coffman and von Hake, 1973) for the stronger earthquakes from 1900 through 1931;

(c) *United States Earthquakes* (U.S. Department of Commerce, 1928–1931) for felt earthquakes from 1928 through 1931; and

(d) the descriptive catalog of felt earthquakes (Townley and Allen, 1939) from 1900 through 1927.

Other references in the professional literature and in newspaper files were also consulted, and the data judged to be most reliable were selected for each event.

The state was divided into 1 degree by 1 degree geographical regions, numbered as shown on the index map (figure 1). This index map also shows the counties and permits determination of the numbered regions covered by any geographical or political area of interest. Appendix A lists the earthquakes covered in this report and gives the region numbers where they occurred. A reference number for the source of each earthquake parameter listed (epicenter, magnitude, etc.) is given. The complete references are listed in Appendix C in numerical sequence by reference number. The newspaper files are not included as numbered source references because they do not provide the numerical values of epicentral coordinates, intensities, magnitudes, or felt areas, but provide only descriptions that are used in determining these values. A separate list of newspapers consulted, arranged by county, is given in Appendix E. To determine whether newspapers were consulted for a particular earthquake, Appendix E must be searched under the appropriate counties for the days following the earthquake.

All the values of magnitude used in this report are based on Richter's scale of 1935. The values of intensity used are either on the Modified Mercalli scale of Wood and Neumann (1931) or on the earlier Rossi Forel scale; a comparison between these two intensity scales is given in Appendix D. Appendix B is a chronological listing of the larger earthquakes (magnitude 5 or greater). The source reference number "7" in Appendices A and B indicates that estimates of location, magnitudes, maximum reported intensities, or total felt areas were made by the authors.

Epicentral coordinates are listed to one–tenth of a degree, but may have uncertainties as large as half a degree in remote areas. Estimates of epicentral coordinates for those earthquakes that had no published epicenters were based on the distribution and severity of felt effects reported. The accuracy of these epicenter estimates by CDMG is controlled by the quantity and spatial distribution of the felt reports. Consequently, accuracy of locations is best for the larger events (magnitude 5 or greater) that occurred in populated areas and is poorest for the smaller events (magnitude less than 5) that occurred in remote areas.

Estimates of the value of intensity and the area of perceptibility were based on descriptions in *United States Earthquakes* and Townley and Allen (1939), and on newspaper accounts. The newspaper articles researched were generally limited to earthquakes that had magnitudes less than 6 because events that had magnitudes of 6 or greater during this time interval already had published locations and magnitudes (e.g. Richter, 1958).

A majority of the magnitudes listed in this report had not been previously estimated. These magnitudes, identified by reference number "7", were estimated from the following earthquake properties: (1) maximum reported intensity (Gutenberg and Richter, 1956); (2) radius of perceptibility and the radii of higher isoseismal lines (Barosh, 1969); (3) size of the total felt area and other isoseismal areas (Toppozada, 1975); and (4) instrumentally determined ground motion amplitudes reported in the UCB Bulletin of the Seismographic Stations, corrected for frequency. Magnitudes were estimated to the nearest half unit only when two or more separate and consistent estimates were possible from the available information. For example, an earthquake that had a maximum reported Modified Mercalli intensity of V (which corresponds to $M = 4.3$) and an approximate radius of perceptibility of 120 km (which corresponds to $M = 4.9$) was assigned $M = 4.5$. When less than two separate estimates of magni-

tude were available for an earthquake, or when two estimates were available but were inconsistent, no magnitude value was assigned. The magnitudes assigned in this way are probably good to ±0.5 unit.

EARTHQUAKE DISTRIBUTION

Figures 2 through 10 are a series of epicenter maps that show the spatial and temporal distribution of California seismicity during the 32–year period covered. The epicenters have been plotted by computer on base maps showing the major Quaternary faults simplified from Jennings (1975). The series contains maps showing the seismicity for successive 5–year periods (figures 2 through 8); and 32–year summaries for earthquakes of magnitude 4 and greater or intensity V and greater (figure 9), and for earthquakes of magnitude 5 and greater (figure 10). The maps show a polygonal outline located approximately 100 km outside the outline of the state. Only earthquakes falling within this polygon are included in the present report.

Earthquakes with known magnitudes were plotted with a symbol of different size for each unit range starting at magnitude 4. When several earthquakes had the same epicentral location, the symbol for only the highest magnitude was plotted. Earthquakes for which we were unable to determine a magnitude (because of scant intensity information) were plotted using the integer value of the maximum reported intensity. These were generally smaller earthquakes than those plotted using a magnitude symbol, especially where the two types of symbols occur side by side. All symbols and integers were plotted at the estimated epicenters and not necessarily at the locations reporting the maximum intensities. The values of maximum reported intensity are dependent on earthquake location and may be misleading, in contrast to the values of magnitude which are independent of location. For example, a maximum intensity of VI reported from a sparsely populated area might indicate a larger earthquake than if it were reported from a densely populated area. The intensity type, Rossi Forel or Modified Mercalli, is not identified on the maps.

Figure 10 shows the epicenters of the larger earthquakes (magnitude 5 or greater) listed in Appendix B. The 1906 San Francisco earthquake (M=8.3) was the greatest event to occur between 1900 and 1931, and was generated by extensive rupture of the San Andreas fault from about latitude 37° N to about latitude 40° N. This event was exhaustively described in the Report of the State Earthquake Investigation Commission (Lawson, 1908). Three other events occurred between 1900 and 1931 that had magnitudes greater than 7 and had epicenters in California or within 100 km of the state borders. They occurred in 1915 in Baja California (Gutenberg and Richter, 1949), in 1923 off the coast of Humboldt County (Bolt and Miller, 1975), and in 1927 off the western coast of Santa Barbara County (Gawthrop, 1975). The 1915 event had a magnitude of 7.1 and attained intensity VII at Calexico; the 1923 event had a magnitude of 7.2 and attained intensity VIII at Ferndale; the 1927 event had a magnitude of 7.5 and attained intensity IX at Lompoc.

A total of twenty–four earthquakes of magnitude 6 or greater occurred between 1900 and 1931. If there were any aftershocks of magnitude 6 or greater following the 1906 San Francisco earthquake they were not identified, possibly because of inadequate reports and the confusion following the main shock.

Eighty–six earthquakes of magnitude 5 or greater occurred from 1900 through 1931. Several groups of these earthquakes indicate significant seismic activity that is not related to the Quaternary faults shown in Figure 10. Three of these groups represent hitherto unknown seismicity of magnitude 5.0 to 5.9 in the foothills surrounding the Great Valley of California.

1. A pair of earthquakes with epicenters in the northern Sierra Nevada located at 39.4° N, 120.9° W and 39.4° N, 120.8° W, occurred in March and June 1909. Both events have CDMG epicenters.

2. Four epicenters were located on the western flank of the southern Sierra Nevada (at 36.1° N, 118.8° W; 35.6° N, 118.8° W; 35.5° N, 118.7° W; 35.3° N, 118.8° W). These events occurred in May 1915, June 1926, January 1905, and December 1905, respectively. The northernmost event has a UCB epicenter and the remaining three events have CDMG epicenters.

3. Three possibly unrelated epicenters were located east of the trend of the San Andreas and Calaveras faults (at 38.3° N, 121.9° W; 36.6° N, 120.8° W; 36.2° N, 120.3° W). These events occurred in May 1902, July 1926, and December 1926, respectively. The northernmost event has a CDMG epicenter, and the remaining two events have UCB epicenters.

The magnitude of each of these events was previously unknown and was determined for the first time by the authors. Each of these events has a maximum reported intensity and a known felt area or radius of perceptibility, and it was possible to estimate the areas shaken at higher intensities for some of them. The events that occurred after 1910 have instrumentally determined amplitude and period information listed in the Bulletins of the Seismographic Stations of UCB. Additional information on these earthquakes can probably be found in other references and newspapers not listed in this report. The newspapers searched for the present report were limited to those available at the State Library in Sacramento; however, newspapers available at other libraries may yield additional earthquake information.

The seismic activity in California from 1900 through 1931 (figure 9) was concentrated along the central and southern San Andreas fault system and in the Cape Mendocino area. A broad zone of seismicity extended from Cape Mendocino inland to the Nevada border between latitudes 39° N and 41° N. Earthquakes also occurred in the Sierra Nevada, mainly along the eastern front of the range. The Central Valley south of latitude 39° N was relatively quiet seismically, as was the eastern portion of the Mojave Desert near the Colorado River.

Table 2 lists the losses in life and major losses in property caused by earthquakes in California between 1900 and 1931. The largest losses did not always result from the largest earthquakes. For example, no major losses are known for the three major earthquakes of magnitudes 7.1, 7.2 and 7.5 discussed above because of their remote locations. Because of the greatly increased population and development in California during the past 50 years, the losses in lives and property from similar earthquakes in the future would be much greater than those shown in Table 2.

Table 2. Earthquake Losses in Califarnia between 1900 and 1931.

Date	*Time Greenwich*	*Location*	*Magni–tude*	*Lives Last*	*Property Damage ($) at time af quake*
18 April 1906	13:12	San Francisca	8.3	700	500,000,000
23 June 1915	03:59 & 04:56	El Centra	6.3	6	900,000
21 April 1918	22:32	San Jacinta	6.8	1	200,000
29 June 1925	14:42	Santa Barbara	6.3	13	8,000,000
29 June 1926	23:21	Santa Barbara	5.5	1	

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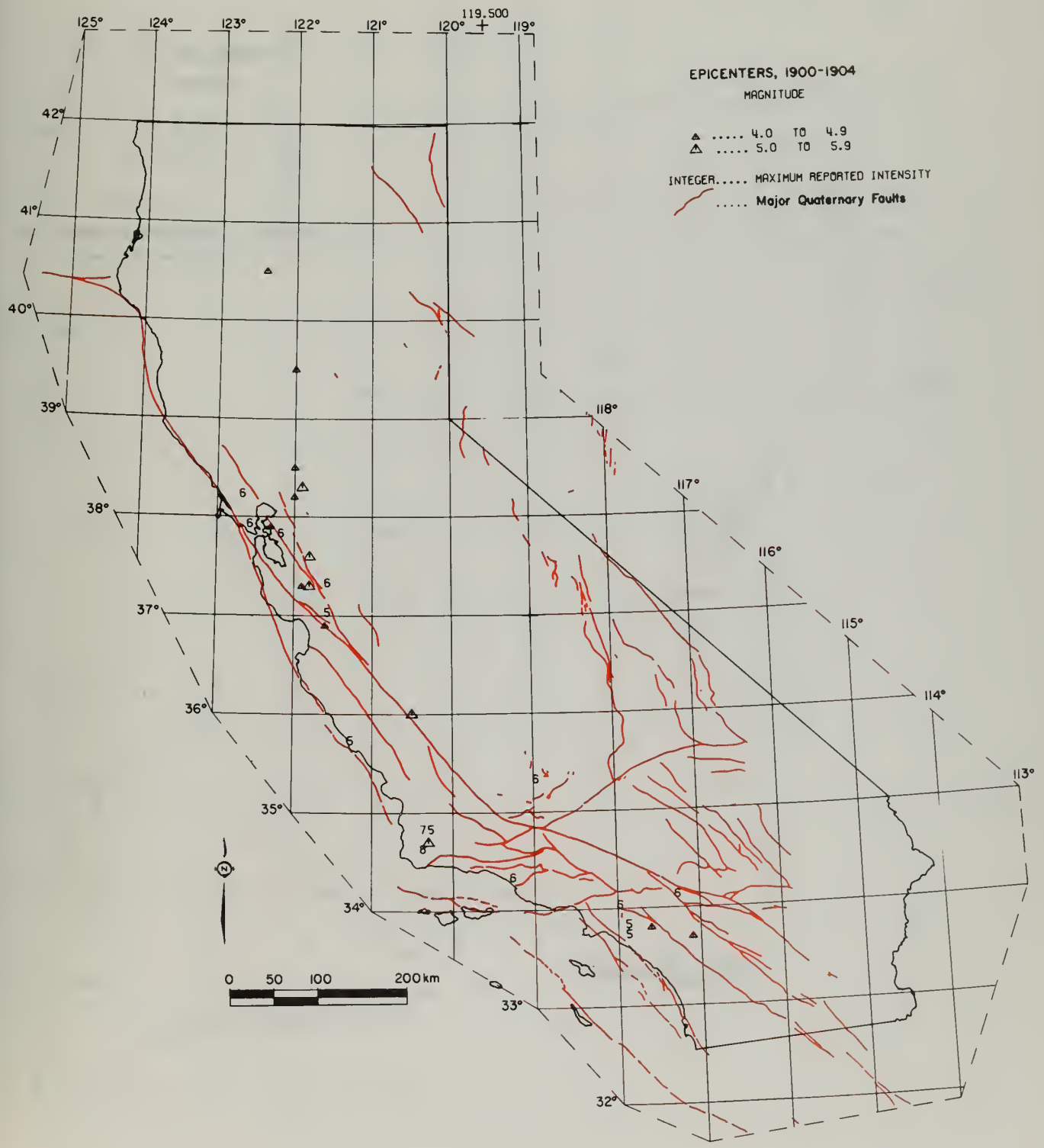

Figure 2. Earthquakes of magnitude 4 and greater or intensity V and greater, 1900–1904.

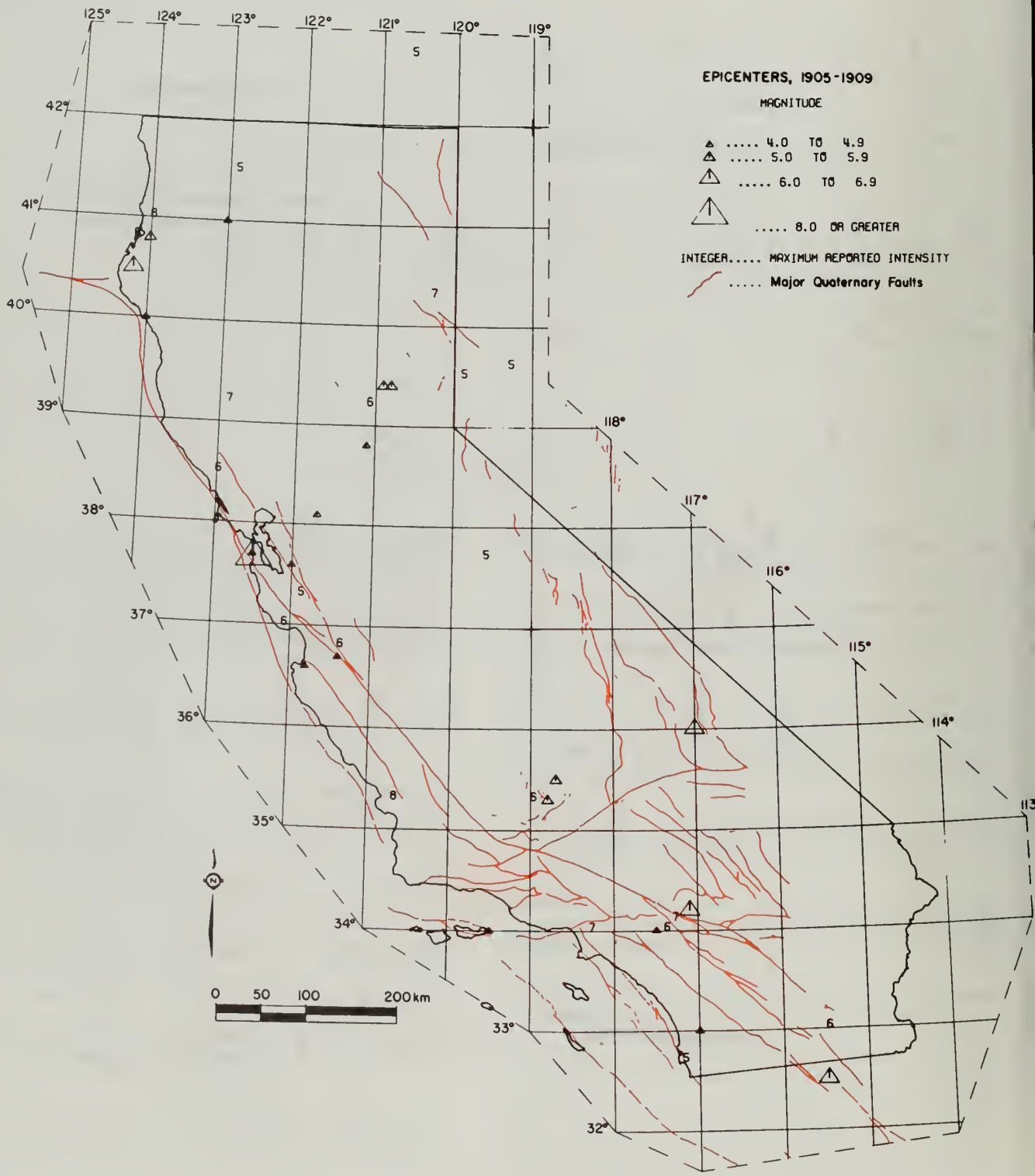

Figure 3. Earthquakes of magnitude 4 and greater or intensity V and greater, 1905–1909.

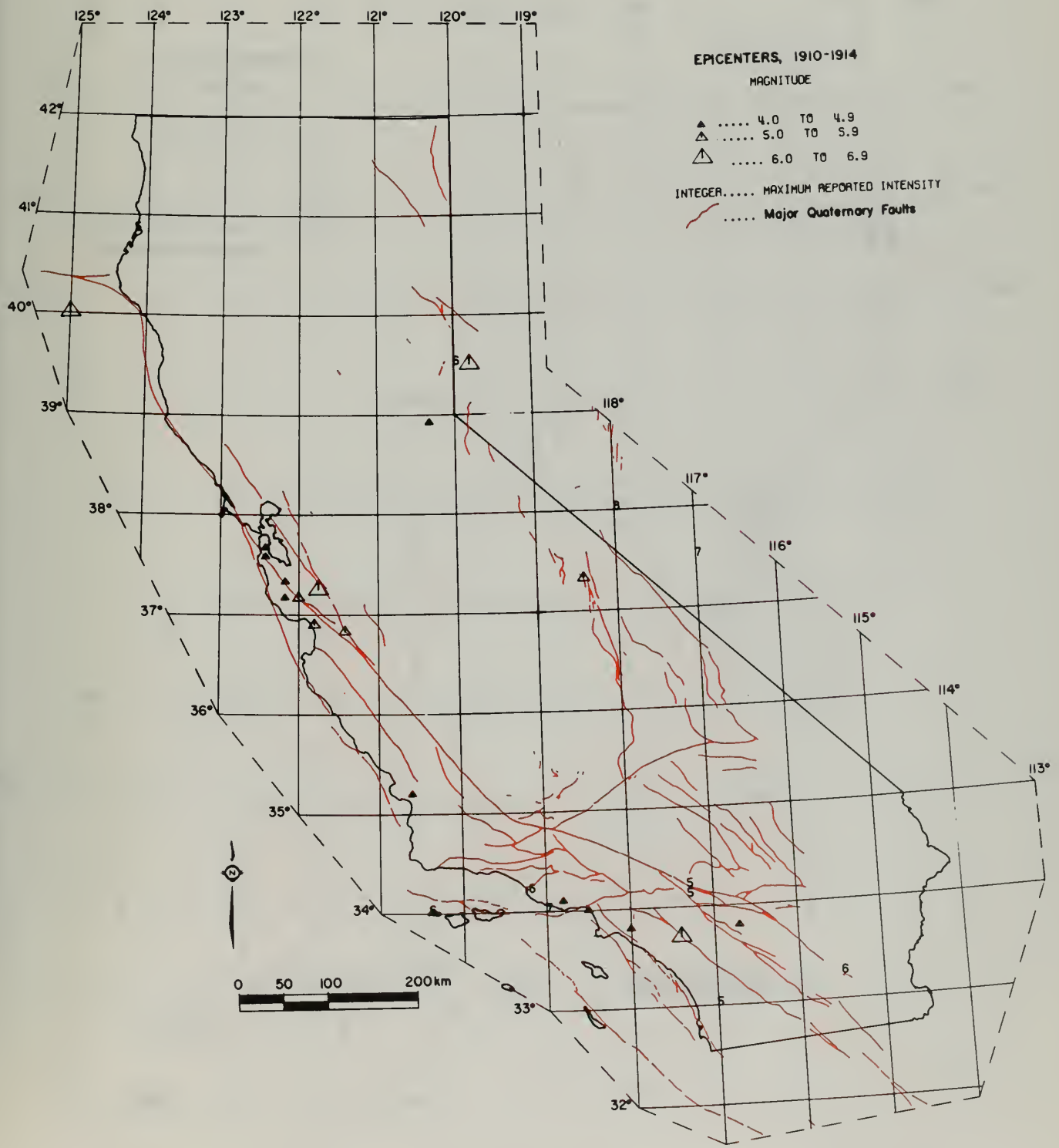

Figure 4. Earthquakes of magnitude 4 and greater or intensity V and greater, 1910–1914.

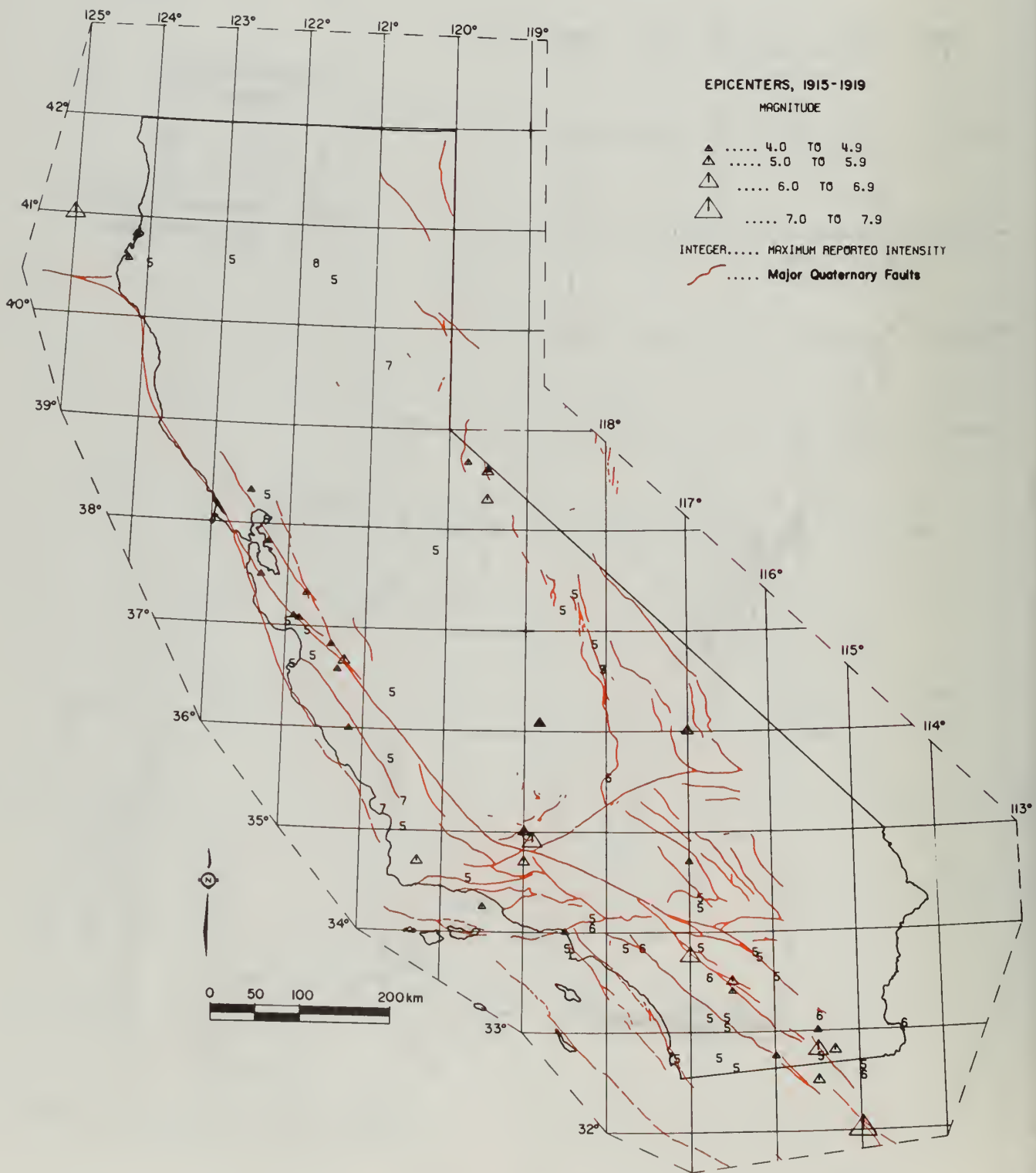

Figure 5. Earthquakes of magnitude 4 and greater or intensity V and greater, 1915–1919.

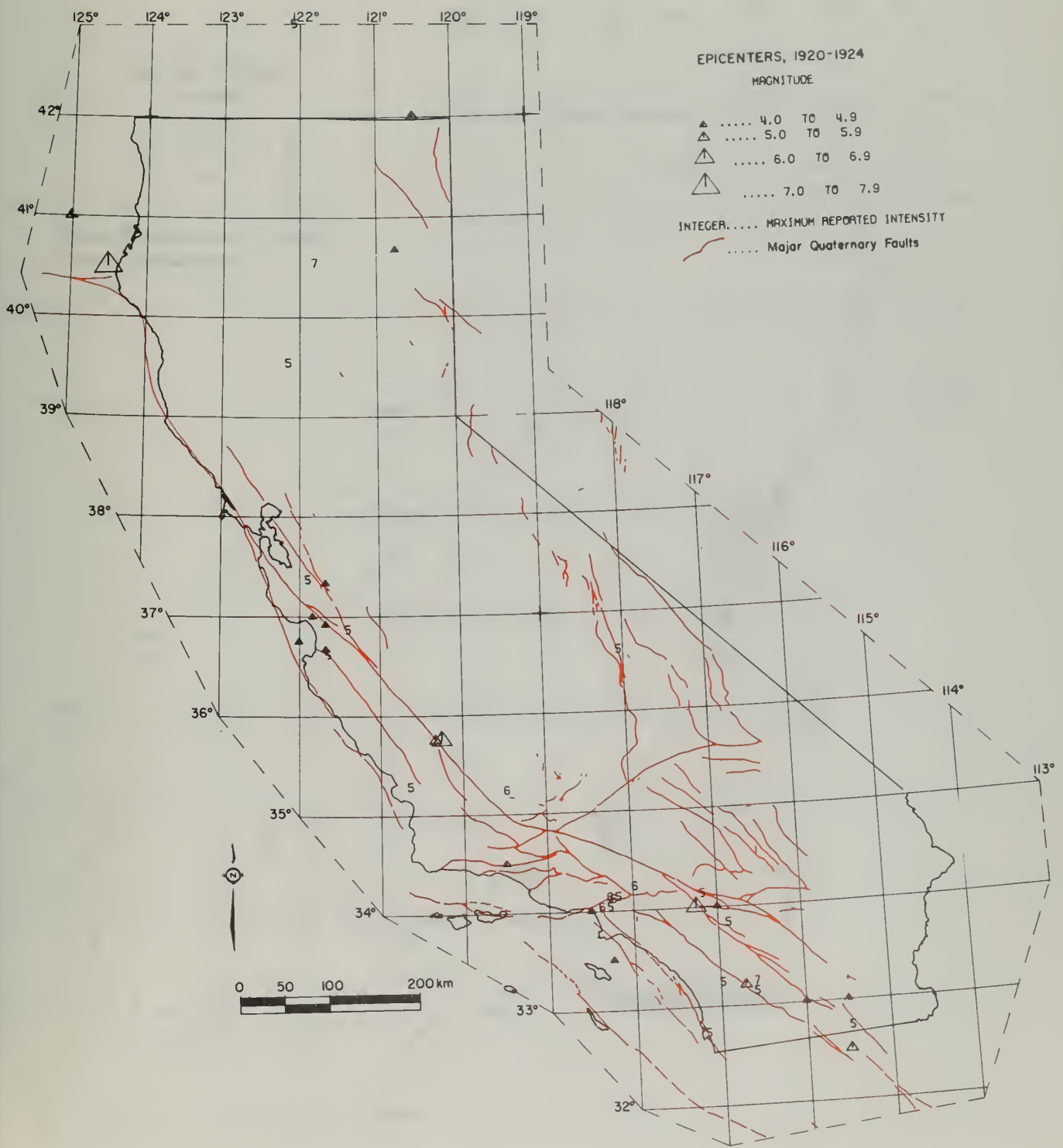

Figure 6. Earthquakes af magnitude 4 and greater or intensity V and greater, 1920–1924.

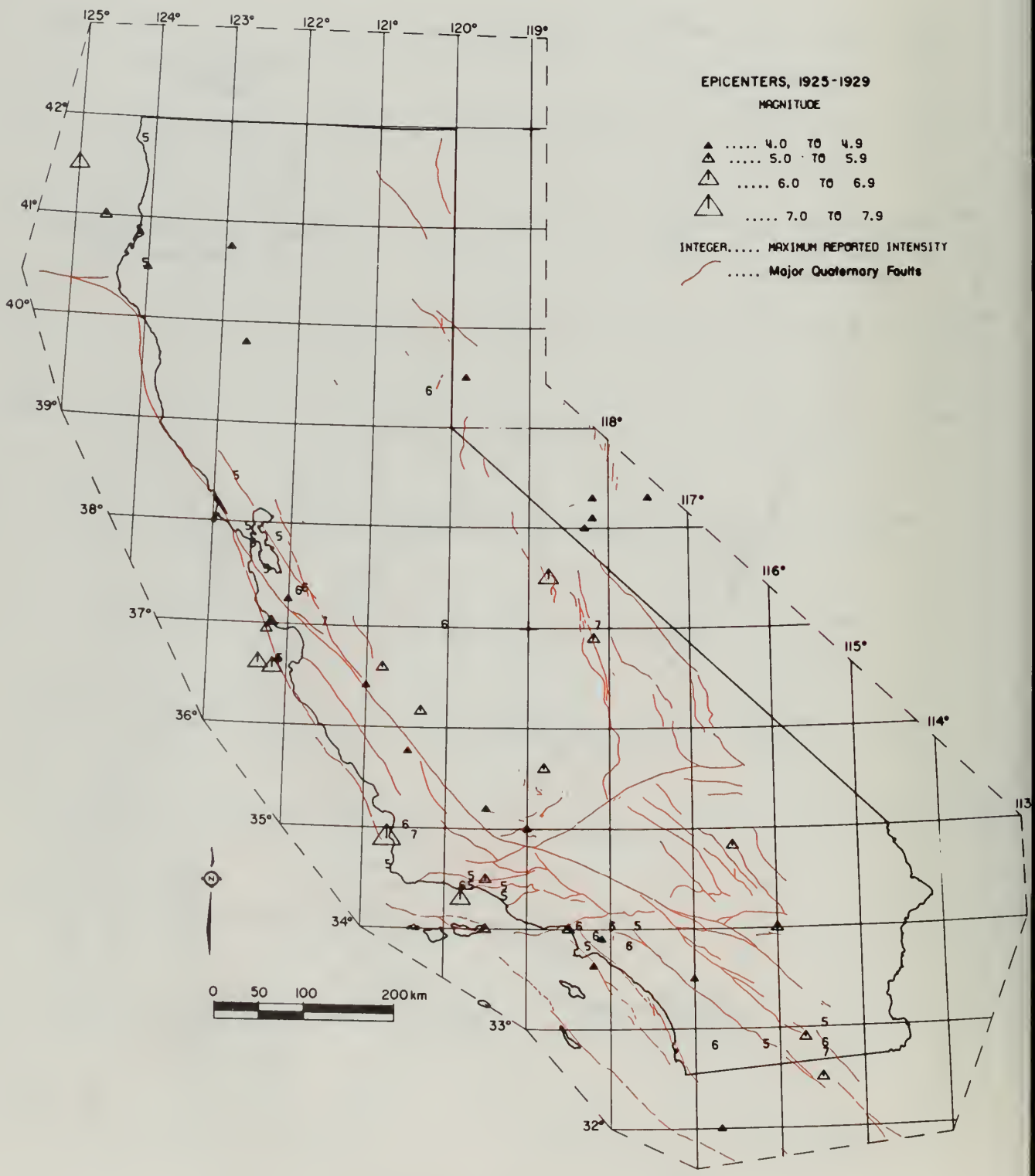

Figure 7. Earthquakes of magnitude 4 and greater or intensity V and greater, 1925–1929.

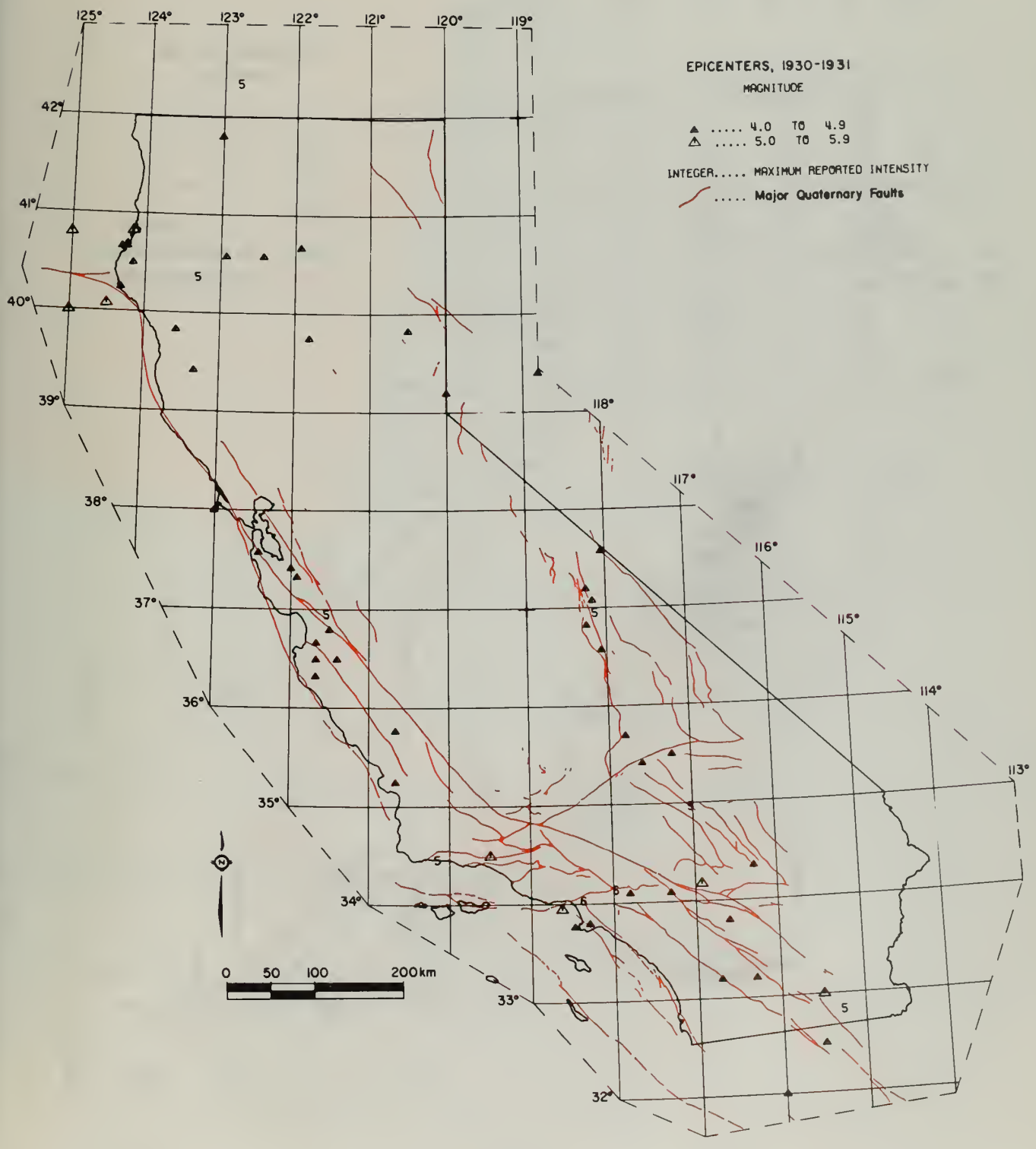

Figure 8. Earthquakes of magnitude 4 and greater or intensity V and greater, 1930–1931.

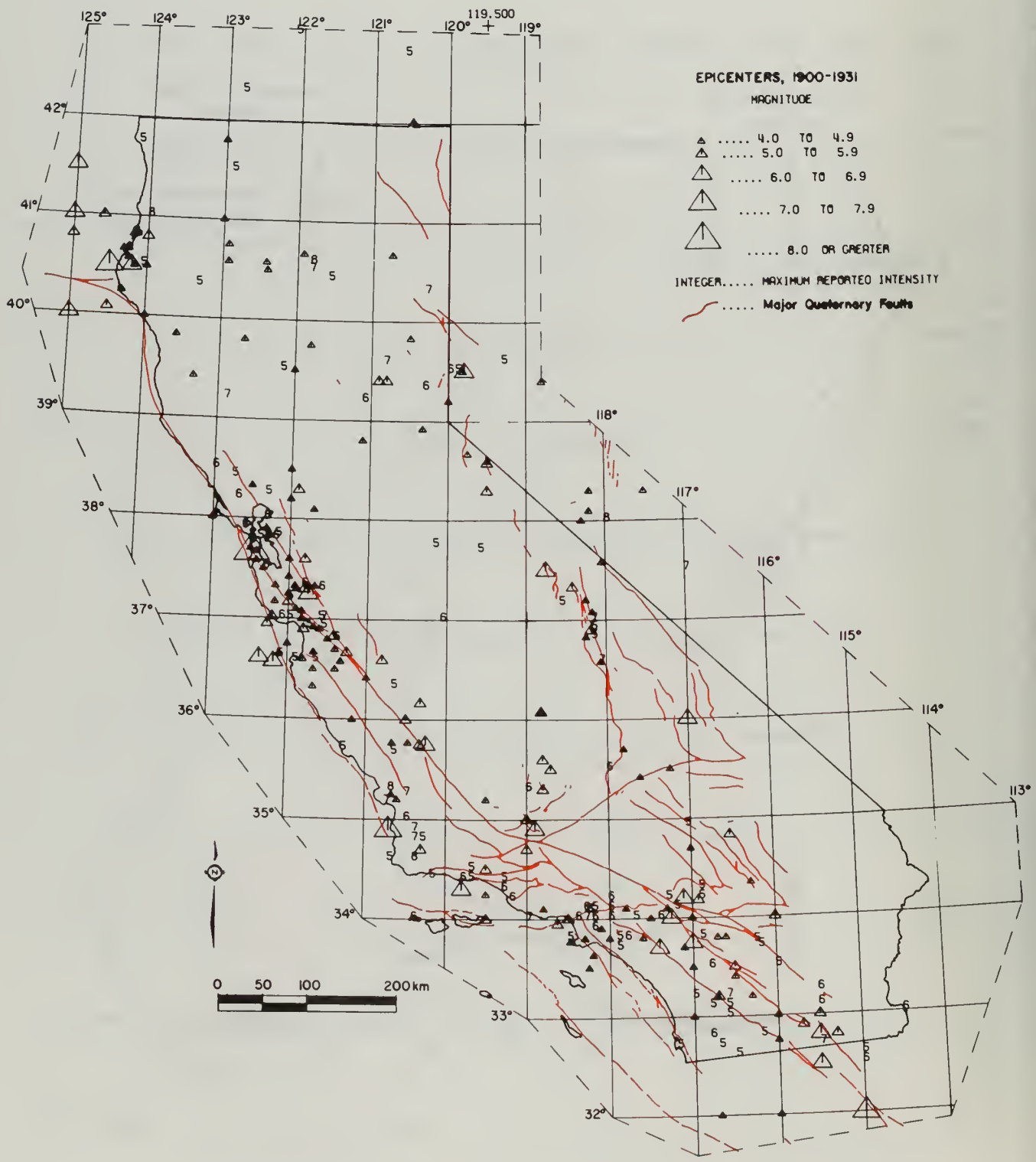

Figure 9. Earthquakes of magnitude 4 and greater or intensity V and greater, 1900–1931.

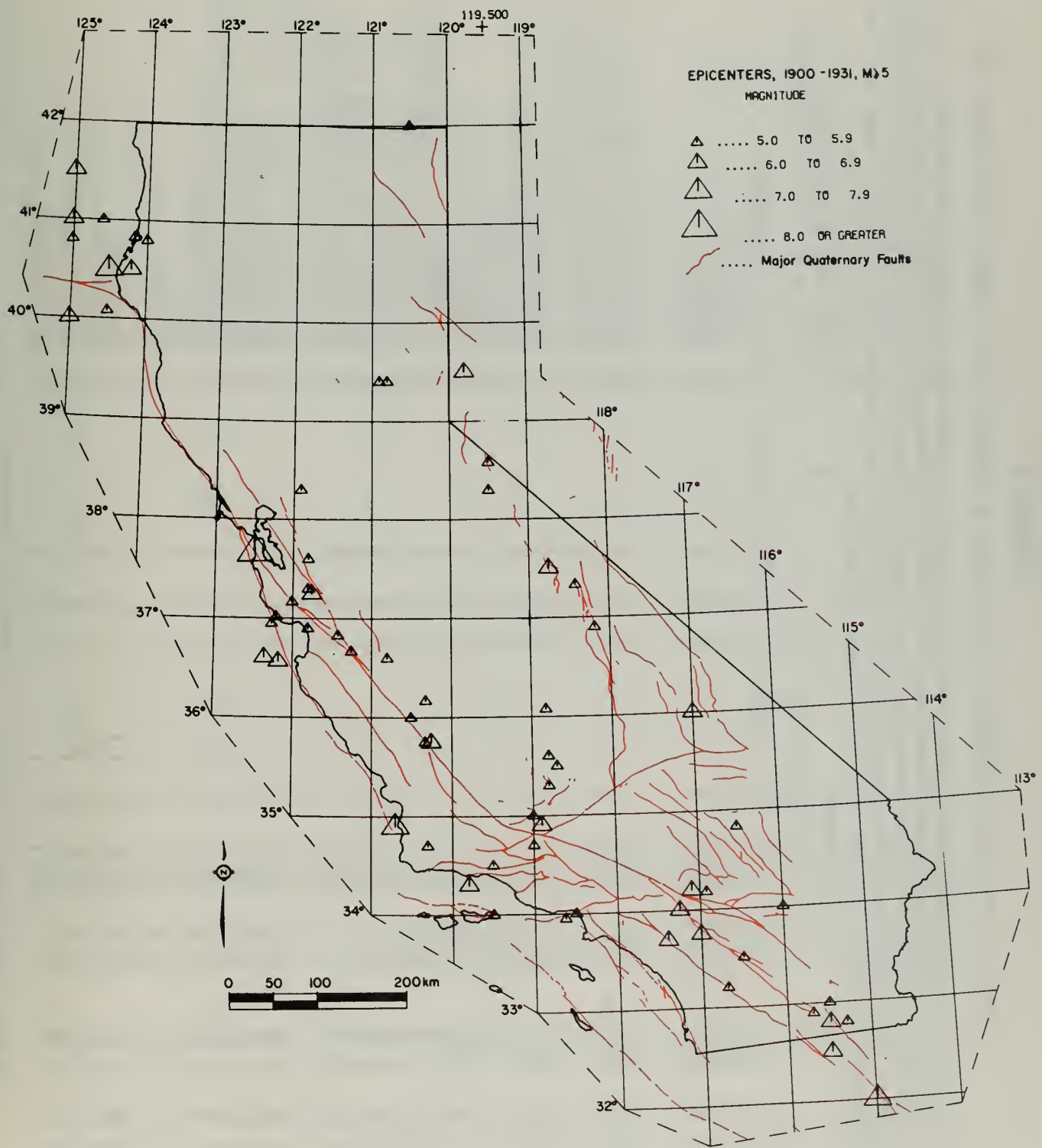

Figure 10. Earthquakes of magnitude 5 and greater, 1900–1931.

APPENDIX A

California Earthquakes of Magnitude 4 and Greater or Intensity V and Greater, 1900 through 1931

Information provided for each event is the date, Greenwich time, epicentral coordinates and source reference; magnitude and source reference; maximum reported intensity and source reference; size of the reported felt area, in thousands of square kilometers, and source reference; region number according to the coordinate grid shown in Figure 1; and comments. Place names in the comments column indicate approximate epicentral locations. The numbers in the reference columns and in the comments column are keyed to the references listed in Appendix C. The column following the maximum reported intensity gives the intensity type as follows:

Blank – not reported felt
A – felt, no maximum reported intensity
B – intensity on the Rossi Forel scale
C – intensity on the Modified Mercalli scale

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1900	2	9	12	30		38.2	122.7	7			6	B	4			44	PETALUMA
1900	4	30	22	41	14	36.9	121.6	7	4.5	7	6	B	4	30	7	32	SALINAS REGION
1900	9	20	7	55		37.9	122.3	7			5	B	4			39	BERKELEY
1900	9	28	12	17		37.0	121.6	7			5	B	4			38	GILROY
1901	3	3	7	45		36.0	120.5	3	5.5	7	8	C	3	104	3	31	STONE CANYON-PARKFIELD
1901	12	11	21	58		37.3	121.6	7			5	B	4			38	MOUNT HAMILTON AND SAN JOSE
1901	12	14	16	13	58	37.9	122.3	7			5	B	4			39	OAKLAND AREA
1901	12	27	11	0		34.1	117.3	7			6	B	4			15	SAN BERNARDINO
1902	4	19	16	9		37.8	122.2	7			6	B	4			39	SAN FRANCISCO BAY AREA
1902	5	19	18	31		38.3	121.9	7	5.5	7	8	C	3	52	3	43	ELMIRA AREA, SOLANO COUNTY
1902	5	21	6	20		38.2	122.0	7	4.0	7	6	C	7			44	SOLANO COUNTY
1902	5	22	7	40		33.8	117.9	7			5	C	7			8	ORANGE COUNTY
1902	6	11	2	45		33.7	117.1	7	4.5	7	5	C	7	33	7	8	RIVERSIDE COUNTY
1902	7	8	9	45		33.7	117.9	7			5	B	4			8	SANTA ANA
1902	7	28	6	57		34.6	120.4	7			8	C	3			18	LOS ALAMOS, SANTA BARBARA COUNTY
1902	7	31	9	20		34.7	120.3	7	5.5	7	8	C	7			18	LOS ALAMOS, SANTA BARBARA COUNTY
1902	8	1	3	30		34.6	120.4	7			8	C	7			18	LOS ALAMOS, SANTA BARBARA COUNTY
1902	8	11	14	10		37.8	122.4	7			5	B	4			39	SAN FRANCISCO BAY AREA
1902	9	11	5	30		34.8	120.3	7			5	B	4			18	LOS ALAMOS, SANTA BARBARA COUNTY
1902	9	11	7	0		34.8	120.3	7			5	B	4			18	LOS ALAMOS, SANTA BARBARA COUNTY
1902	9	18	11	51		37.9	122.6	7			6	B	4			39	SAN FRANCISCO-POINT BONITA REGION
1902	12	12	0	0		34.8	120.4	7			7	C	3			18	LOS ALAMOS, SANTA BARBARA COUNTY
1903	1	8	0	30		35.3	119.0	7			6	B	4			24	BAKERSFIELD
1903	6	11	13	12		37.6	121.8	7	5.5	7	7	C	3	150	7	38	EAST SAN FRANCISCO BAY
1903	7	24	20	26		39.5	122.0	3	4.5	7	7	C	3	25	7	48	WILLOWS AREA, GLENN COUNTY
1903	7	29	7	13		35.7	121.3	7			5	B	4			26	POINT PIEDRAS BLANCAS, SAN LUIS OBISPO COUNTY
1903	8	3	6	49		37.3	121.8	7	5.5	7	7	C	3	130	4	38	SAN JOSE-MT. HAMILTON REGION
1903	9	16	12	10		33.8	117.6	7	4.0	7	6	B	4	10	7	8	SANTA ANA-RIVERSIDE
1903	12	9	16	44		40.8	124.2	7			6	B	4			55	EUREKA
1903	12	25	17	45		34.0	118.0	3			6	C	3			16	LOS ANGELES REGION
1904	4	16	9	20		40.5	122.4	7	4.5	7	6	B	4	14	7	53	REDDING AREA
1904	4	21	11	50		37.3	121.9	7	4.0	7	5	B	4			38	SAN JOSE AREA
1904	5	1	18	30		34.3	119.3	7			6	B	4			17	LOS ANGELES AND VENTURA
1904	7	30	10	26		38.5	122.0	7	4.5	7	6	B	4	15	7	44	WOODLAND AREA
1904	8	27	20	58	47	37.3	121.6	7			6	B	4			38	MOUNT HAMILTON
1904	12	14	15	10		37.9	122.3	7	4.0	7	5	B	4			39	SAN FRANCISCO BAY AREA
1905	1	1	23	38		37.7	122.5	7	4.0	7	6	B	4			39	SAN FRANCISCO AREA
1905	1	6	14	30		35.5	118.7	7	5.0	7	5	C	7	50	7	23	KERN RIVER AREA
1905	3	19	4	40		34.0	119.5	7	4.0	7							

Appendix A (continued)

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1905	7	15	20	41		34.1	117.3	7			7	B	4			15	RIVERSIDE AND SAN BERNARDINO
1905	9	3	5	40		34.0	118.3	7			7	B	4			16	LOS ANGELES
1905	12	3	19	30		37.8	122.5	7			5	B	4			39	SAN FRANCISCO BAY AREA
1905	12	23	22	23		35.3	118.8	7	5.0	7	8	B	4			23	BAKERSFIELD, FELT LOS ANGELES TO VISALIA
1906	3	3	20	25		33.0	117.0	7	4.5	7	5	C	7	25	7	8	SAN DIEGO COUNTY
1906	4	18	13	12	21	37.7	122.5	100	8.3	11	11	C	3	975	12	39	SAN FRANCISCO EARTHQUAKE (12 AND 100)
1906	4	18	16	14		37.7	122.5	7			5	B	12			39	SAN FRANCISCO AFTERSHOCK, BERKELEY AREA
1906	4	18	16	15		37.7	122.5	7			5	B	12			39	SAN FRANCISCO AFTERSHOCK, FELT TO SACRAMENTO
1906	4	18	16	19		37.7	122.5	7			5	B	12			39	SAN FRANCISCO AFTERSHOCK, OAKLAND AREA
1906	4	18	19	0		37.7	122.5	7			5	B	12			39	SAN FRANCISCO AFTERSHOCK, PENINSULA AREA
1906	4	18	22	30		37.7	122.5	7			6	B	12			39	SAN FRANCISCO AFTERSHOCK, UKIAH AREA
1906	4	18	22	35		37.7	122.5	7			6	B	12			39	SAN FRANCISCO AFTERSHOCK, UKIAH AREA
1906	4	18	23	0		37.7	122.5	7			5	B	12			39	SAN FRANCISCO AFTERSHOCK, LOS GATOS AREA
1906	4	19	0	28		32.7	117.2	7			5	C	7			4	BALLAST POINT, SAN DIEGO COUNTY
1906	4	19	0	30		32.5	115.5	10	6.0	10	8	C	3	100	7	2	BRAWLEY
1906	4	19	9	30		42.7	120.6	3			5	C	3			80	PAISLEY, OREGON
1906	4	20	4	15		39.6	119.3	94			5	C	94			70	WESTERN NEVADA
1906	4	23	8	48		41.0	124.0	3			7	C	3			60	HUMBOLDT COUNTY
1906	4	25	20	0		37.7	122.5	7			5	B	12			39	SAN FRANCISCO AFTERSHOCK, MILLS COLLEGE AREA
1906	4	25	23	15		37.7	122.5	7			7	B	12			39	SAN FRANCISCO AFTERSHOCK, PENINSULA AREA
1906	5	2	5	30		38.5	123.0	3			6	C	3			45	GUERNEVILLE AND PEACHLAND
1906	5	7	4	10		39.2	122.9	7			7	B	4			48	UPPER LAKE AND UKIAH
1906	5	7	5	0		39.2	122.9	7			7	B	4			48	UPPER LAKE
1906	5	10	14	57		41.0	123.0	7	4.0	7	3	C	7	20	7	59	TRINITY COUNTY
1906	5	15	1	20		37.7	122.5	7			5	B	12			39	SAN FRANCISCO AFTERSHOCK, PENINSULA AREA
1906	5	15	9	32		39.2	121.1	7			6	B	4			47	GRASS VALLEY
1906	5	17	8	18		37.7	122.5	7			6	B	12			39	SAN FRANCISCO AFTERSHOCK, PENINSULA AREA
1906	5	18	4	21		37.7	122.5	7			6	B	12			39	SAN FRANCISCO AFTERSHOCK, PENINSULA AREA
1906	5	19	4	54		40.0	124.0	7	4.0	7	5	C	7			55	HUMBOLDT-MENDOCINO COUNTY LINE
1906	6	5	7	51		37.7	122.5	7			5	B	12			39	SAN FRANCISCO AFTERSHOCK, PENINSULA AREA
1906	12	7	6	40		35.3	120.7	7			8	B	4			25	SAN LUIS OBISPO
1907	1	1	12	0		41.5	122.9	7			5	B	4			58	SISKIYOU COUNTY
1907	1	8	23	45		37.0	122.1	7			6	B	4			39	SANTA CRUZ
1907	5	22	6	52		34.0	117.4	7			6	B	4			15	RIVERSIDE
1907	6	5	8	27		37.6	122.0	7	4.0	7	5	B	4			39	SAN FRANCISCO BAY AREA
1907	8	11	12	19		40.8	124.2	7			6	B	4			55	HUMBOLDT COUNTY
1907	9	20	1	54		34.2	117.1	10	6.0	10	7	C	3	130	3	15	SAN BERNARDINO AREA
1907	11	22	9	30		39.5	119.9	94			5	C	94			70	RENO AREA, NEVADA
1908	1	27	2	0		40.3	120.3	7			7	C	3			51	HONEY LAKE REGION, LASSEN COUNTY
1908	3	23	13	57		33.0	115.5	7			6	B	4			6	IMPERIAL VALLEY
1908	4	25	11	33		36.6	121.8	7	4.5	7	6	B	4	25	7	32	MONTEREY-SALINAS REGION
1908	4	29	8	41		37.0	122.1	7			5	B	4			39	SANTA CRUZ AREA
1908	5	30	19	38		38.8	121.1	7	4.0	7	5	C	7	10	7	43	FOLSOM-AUBURN AREA
1908	7	3	12	55		34.0	117.5	7	4.0	7	4	C	7			15	RIVERSIDE AND LOS ANGELES COUNTIES
1908	8	18	10	59		40.8	124.0	7	5.0	7	7	C	3			55	HUMBOLDT COUNTY
1908	9	4	0	0		35.3	119.0	7			6	B	4			24	BAKERSFIELD
1908	10	18	8	21		36.8	121.4	7			6	B	4			32	HOLLISTER-SALINAS REGION

Appendix A (continued)

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1908	11	4	8	37		36.0	117.0	10	6.5	10	8	B	4			28	DEATH VALLEY
1909	2	14	15	55		38.1	121.7	7	4.5	7	5	C	7	15	7	43	DELTA AREA, EAST OF ANTIOCH
1909	3	3	12	0		39.4	120.9	7	5.0	7	6	C	7	50	7	47	NEVADA COUNTY
1909	5	18	1	19		41.0	124.0	3			8	C	3			60	HUMBOLDT COUNTY
1909	6	23	7	24		39.4	120.8	7	5.5	7	7	C	3	130	4	46	SIERRA COUNTY
1909	10	29	6	45		40.5	124.2	7	6.0	10	8	C	3	260	3	55	HUMBOLDT COUNTY
1909	11	22	15	21		36.7	121.4	7	4.5	7	6	B	4	15	7	32	ORIGIN PROBABLY SOUTH OF HOLLISTER
1910	3	11	6	52		36.9	121.8	7	5.5	7	6	C	3	155	3	32	MONTEREY BAY REGION
1910	3	19	0	11		40.0	125.0	10	6.0	10	5	C	7			75	HUMBOLDT COUNTY, PROBABLY SUBMARINE ORIGIN
1910	4	11	7	57		33.7	117.4	4	5.0	7		A	4	30	7	8	ORANGE COUNTY - RIVERSIDE COUNTY
1910	5	6	16	40		37.3	118.4	1	5.5	7	7	B	4	130	4	35	OWENS VALLEY
1910	5	13	6	20		33.7	117.4	4	5.0	7	5	B	4	40	7	8	LAKE ELSINORE AREA
1910	5	15	15	47		33.7	117.4	10	6.0	10	7	C	3	75	7	8	LAKE ELSINORE AREA
1910	8	5	1	27		40.8	124.2	1			5	C	7			55	EUREKA
1910	11	7	17	20		37.5	117.0	94			7	C	94			34	GOLDFIELD AND RHYOLITE, NEVADA
1910	11	19	2	25		38.0	118.0	94			7	C	94			40	TONOPAH JUNCTION, NEVADA
1910	11	21	23	23		38.0	118.0	94			8	C	94			40	TONOPAH JUNCTION, NEVADA
1910	11	22	0	30		38.0	118.0	94			6	C	94			40	TONOPAH JUNCTION, NEVADA
1910	11	22	6	5		38.0	118.0	94			7	C	94			40	TONOPAH JUNCTION, NEVADA
1910	12	27	17	15		33.3	115.5	4			6	B	4			6	IMPERIAL VALLEY
1910	12	31	12	11		36.8	121.4	1	5.0	7	7	B	4	20	7	32	HOLLISTER AREA
1911	3	11	21	30		36.8	121.4	1	4.5	7	6	C	3			32	HOLLISTER AREA
1911	3	29	4	25		34.0	120.4	7			6	B	4			18	SAN MIGUEL ISLAND
1911	5	10	13	40		34.1	118.8	7	4.0	7	4	C	7	16	7	16	SANTA MONICA MOUNTAINS
1911	7	1	22	0		37.3	121.8	1	6.6	11	8	C	3	155	3	38	20 MILES SOUTH OF MOUNT HAMILTON
1911	8	11	18	20		33.8	116.7	4	4.0	7	6	B	4			7	SAN JACINTO AREA
1911	8	11	23	40		33.8	116.7	4	4.5	7	6	B	4			7	SAN JACINTO AREA
1911	11	22	2	57		34.1	117.3	7			5	B	4			15	SAN BERNARDINO-RIALTO AREA
1912	1	5	3	54		37.3	118.4	1	5.5	7	7	B	4	130	4	35	BISHOP AREA, INYO COUNTY
1912	8	31	4	53		38.9	120.3	1	4.5	7	6	B	4	25	7	42	CENTRAL SIERRA NEVADA
1912	9	12	17	27		37.3	122.2	1	4.5	7	6	B	4	26	4	39	NORTHWEST OF LOS GATOS, SANTA CLARA COUNTY
1912	10	25	3	16		36.8	121.4	1			5	B	4			32	HOLLISTER-SALINAS REGION
1912	12	14	0	0		34.0	119.0	3			7	C	3			17	OXNARD, VENTURA COUNTY
1913	4	13	10	45		34.2	117.3	7			5	B	4			15	SAN BERNARDINO
1913	10	20	11	25		35.2	120.6	7	4.0	7	5	C	7			25	SAN LUIS OBISPO COUNTY
1913	10	21	9	38		33.8	118.0	7	4.0	7	5	C	7	10	7	9	ORANGE AND LOS ANGELES COUNTIES
1913	10	25	9	45		37.7	122.4	1	4.0	7	4	B	4	8	7	39	SAN FRANCISCO PENINSULA
1914	1	24	3	33		37.6	122.4	1	4.0	7	6	B	4	13	4	39	ON SAN ANDREAS FAULT, SAN MATEO COUNTY

Appendix A (continued)

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1914	2	18	18	17		39.5	119.8	94	5.0	7	7	C	94	42	7	70	TRUCKEE MEADOWS AREA
1914	2	20	10	0		39.5	120.0	94			6	C	94			46	RENO, NEVADA
1914	4	24	8	34		39.5	119.8	94	6.4	94	8	C	94	260	94	70	WESTERN NEVADA
1914	6	16	10	52		34.2	119.2	7			6	B	4			17	OJAI VALLEY, VENTURA COUNTY
1914	11	8	11	40		34.0	118.5	7	4.5	7	5	B	4			16	SANTA MONICA BAY AREA
1914	11	9	2	31		37.2	122.0	1	5.5	7	7	C	3	78	4	39	SANTA CRUZ MOUNTAINS
1914	12	28	10	42		37.2	122.2	1	4.5	7	6	B	4	26	4	39	SANTA CRUZ MOUNTAINS
1914	12	29	10	0		33.0	117.0	7			5	B	4			8	OAK GROVE, SAN DIEGO COUNTY
1915	1	12	4	31		34.7	120.3	7	5.5	7	8	C	3	130	4	18	LOS ALAMOS, SANTA BARBARA COUNTY
1915	2	16	13	30		33.1	116.6	7			5	B	4			7	JULIAN, SAN DIEGO COUNTY
1915	2	22	0	0		40.6	121.8	1			8	B	4			52	TWIN VALLEY, SHASTA CO., POSSIBLY A LANDSLIDE
1915	2	28	10	44		36.6	121.9	1			5	B	4			32	ARBOLADO, MONTEREY COUNTY
1915	3	4	12	50		33.1	116.6	7			5	B	76			7	JULIAN, SAN DIEGO COUNTY
1915	4	5	21	40		38.6	119.5	1	4.5	7	4	B	4			41	EAST-CENTRAL SIERRA NEVADA
1915	4	5	23	11		38.6	119.5	1	5.0	7	5	B	4	65	4	41	CENTRAL SIERRA NEVADA
1915	4	6	16	28		36.9	121.8	1			5	B	4			32	WATSONVILLE AREA
1915	4	17	6	27		38.7	119.8	1	4.0	7	4	B	4			41	EAST-CENTRAL SIERRA NEVADA
1915	4	28	3	10		33.0	115.5	7			5	B	4			6	BRAWLEY
1915	4	30	8	20		33.0	115.5	7			5	B	4			6	BRAWLEY
1915	5	11	11	45		33.1	116.6	7			5	B	4			7	JULIAN, SAN DIEGO COUNTY
1915	5	29	6	46		36.1	118.8	1	5.0	7	5	B	4	40	7	29	SOUTHERN SIERRA NEVADA
1915	5	29	8	30		36.1	118.8	1	4.5	7		A	4			29	SOUTHERN SIERRA NEVADA, TULARE COUNTY
1915	6	4	21	10		40.5	124.0	1			5	B	4			55	SHIVELY, HUMBOLDT COUNTY
1915	6	18	15	5		33.8	118.5	7			5	B	4			9	AVALON AND SANTA MONICA
1915	6	23	3	59		32.8	115.5	10	6.3	10	8	C	3	200	3	2	IMPERIAL VALLEY
1915	6	23	4	56		32.8	115.5	10	6.3	10	8	C	3	200	3	2	IMPERIAL VALLEY
1915	7	3	23	45		32.8	115.5	7			6	B	4			2	IMPERIAL VALLEY
1915	7	4	0	45		32.8	115.5	7			6	B	4			2	IMPERIAL VALLEY
1915	7	4	5	0		32.8	115.5	7			6	B	4			2	IMPERIAL VALLEY
1915	8	5	16	30		40.4	121.6	1			5	B	76			52	DRAKESBAD
1915	8	18	22	40		32.8	115.5	7			5	B	4			2	IMPERIAL VALLEY
1915	8	19	4	0		32.8	115.5	7			5	B	4			2	IMPERIAL VALLEY
1915	8	19	22	40		32.8	115.5	7			5	B	4			2	IMPERIAL VALLEY
1915	8	20	4	0		32.8	115.5	7			5	B	4			2	IMPERIAL VALLEY
1915	9	8	7	42		32.7	117.2	7			5	B	4			4	POINT LOMA AND SAN DIEGO
1915	9	8	12	45		35.7	120.7	1			5	B	4			25	EAST OF PASO ROBLES
1915	10	1	15	26		37.5	122.3	1	4.0	7	5	B	4	7	7	39	REDWOOD CITY AREA, SAN MATEO COUNTY
1915	10	8	5	26		37.8	122.3	1	4.5	7	6	C	3	9	7	39	PIEDMONT AREA, ALAMEDA COUNTY
1915	10	10	5	6		34.2	116.9	7			5	B	4			14	SEVEN OAKS, SAN BERNARDINO COUNTY
1915	11	21	0	13	42	32.0	115.0	11	7.1	11	7	C	3	310	3	2	VOLCANO LAKE, BAJA CALIFORNIA
1915	11	21	4	10		32.0	115.0	7			5	B	4			2	VOLCANO LAKE, BAJA CALIFORNIA
1915	12	1	14	5		34.3	116.9	7			5	B	4			14	HOLCOMB VALLEY, SAN BERNARDINO COUNTY
1915	12	27	7	23		36.8	121.4	1	4.0	7	5	B	4	26	4	32	HOLLISTER AREA
1916	5	2	14	32		34.1	118.2	7			5	B	4			16	MOUNT WILSON-PASADENA
1916	6	27	13	43		36.7	121.3	1	4.0	7	5	B	4			32	SOUTH OF HOLLISTER
1916	7	5	4	40		40.6	124.3	1	4.5	7	6	C	3			55	HUMBOLDT COUNTY
1916	7	16	11	50		34.7	117.0	7	4.5	7	5	B	4	25	7	15	SAN BERNARDINO MOUNTAINS
1916	7	16	12	30		34.7	117.0	7	4.0	7	5	B	4	10	7	15	SAN BERNARDINO MOUNTAINS
1916	8	6	19	38		36.7	121.3	1	5.5	7	7	C	3	78	4	32	PAICINES AREA, SAN BENITO COUNTY
1916	8	6	20	56		36.7	121.7	1			5	B	4			32	SALINAS

Appendix A (continued)

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1916	8	8	16	50		37.1	121.9	7	4.0	7	5	B	4	6	7	38	ON SAN ANDREAS FAULT SOUTHWEST OF MT. HAMILTON
1916	8	23	14	55		40.8	124.2	1	4.0	7	6	B	4			55	EUREKA AREA
1916	9	30	2	11		33.5	116.5	7	5.0	7	5	B	4	52	4	7	JULIAN AREA, SAN DIEGO COUNTY
1916	9	30	4	25		33.5	116.0	7			5	B	4			7	IMPERIAL VALLEY
1916	10	23	2	44		34.9	118.9	11	6.0	10	7	C	3	130	4	16	TEJON PASS
1916	10	23	2	54		34.7	119.0	7	5.5	7	6	B	4	70	7	17	TEJON PASS
1916	10	24	13	30		36.0	121.2	1	4.0	7	5	B	4	7	7	32	JOLON, MONTEREY COUNTY
1916	11	3	5	55		32.7	115.5	7			5	B	4			2	CALEXICO
1916	11	3	9	3		37.0	122.0	1			5	B	4			39	SANTA CRUZ
1916	11	10	9	11		36.0	117.0	7	5.5	7	5	B	4			28	NEAR DEATH VALLEY, REFERENCE 94 ASSIGNED M=6.1
1916	11	26	17	5		33.5	116.8	7			5	B	4			7	CAHUILLA, RIVERSIDE COUNTY
1916	12	1	22	53		35.2	120.8	1			7	C	3			25	AVILA, SAN LUIS OBISPO COUNTY
1916	12	7	18	55		32.7	115.5	7			5	B	4			2	CALEXICO
1916	12	7	20	45		32.7	115.5	7			5	B	4			2	CALEXICO
1917	2	13	13	5		34.0	118.2	4			6	B	4			16	LOS ANGELES
1917	3	3	16	0		40.8	124.2	1			6	B	4			55	TABLE BLUFF
1917	3	19	8	50		36.6	118.1	1			5	B	4			29	LONE PINE, EAST OF SIERRA NEVADA
1917	4	13	3	59		34.3	119.5	7	4.5	7	6	B	4	21	4	17	SANTA BARBARA CHANNEL
1917	4	21	6	59		34.3	119.5	7	4.0	7	5	B	4	10	4	17	SANTA BARBARA CHANNEL
1917	5	11	22	33	30	38.7	119.8	1			5	B	4			41	MARKLEEVILLE AND TOWLE
1917	5	19	6	35		33.8	117.8	7			5	B	4			8	YORBA LINDA, ORANGE COUNTY
1917	5	19	7	19		33.8	117.8	7			5	B	4			8	YORBA LINDA, ORANGE COUNTY
1917	5	20	9	45		33.8	117.8	7			5	B	4			8	YORBA LINDA, ORANGE COUNTY
1917	5	27	9	30		33.0	115.5	7			5	B	4			6	BRAWLEY
1917	5	28	6	6		32.8	115.3	7	5.5	7	8	B	4	104	4	2	SOUTHEAST OF HOLTVILLE, IMPERIAL COUNTY
1917	5	28	10	17		33.1	116.6	7			5	B	4			7	JULIAN, SAN DIEGO COUNTY
1917	5	31	2	10		33.0	115.5	7			6	B	4			6	BRAWLEY AND CALEXICO
1917	5	31	4	35		33.5	116.8	7			5	B	4			7	CAHUILLA, RIVERSIDE COUNTY
1917	6	2	4	35		33.5	116.8	7			5	B	4			7	CAHUILLA, RIVERSIDE COUNTY
1917	6	8	0	31		32.7	115.5	7			5	B	4			2	CALEXICO
1917	6	9	3	34		36.6	121.3	1	4.0	7	5	B	4	10	7	32	SOLEDAD AREA, MONTEREY COUNTY
1917	6	11	3	54		33.0	116.6	7			5	B	4			7	CUYAMACA DAM, SAN DIEGO COUNTY
1917	6	18	6	0		32.8	115.5	7			5	B	4			2	HEBER, IMPERIAL COUNTY
1917	6	21	19	20		36.8	118.2	1			5	B	4			29	OWENS VALLEY
1917	6	26	4	24		34.0	118.2	7			5	B	4			16	LOS ANGELES
1917	6	26	21	15		34.0	118.2	7			6	B	4			16	LOS ANGELES
1917	6	26	21	20		34.0	118.2	7			6	B	4			16	LOS ANGELES
1917	6	26	21	30		34.0	118.2	7			6	B	4			16	LOS ANGELES
1917	7	6	11	1		36.6	118.1	1			7	C	3			29	OWENS VALLEY
1917	7	9	22	22		35.3	120.5	1			6	C	3			25	LOPEZ CANYON, SAN LUIS OBISPO COUNTY
1917	7	9	22	38		35.3	120.5	1			7	B	78			25	LOPEZ CANYON, SAN LUIS OBISPO COUNTY
1917	7	10	0	43		35.3	120.5	1			7	B	78			25	LOPEZ CANYON, SAN LUIS OBISPO COUNTY
1917	7	10	0	45		35.3	120.5	1			7	B	78			25	LOPEZ CANYON, SAN LUIS OBISPO COUNTY
1917	7	26	8	31		35.0	120.5	7			5	B	4			25	SANTA MARIA AREA, SANTA BARBARA COUNTY
1917	8	12	11	0		33.7	116.2	7			5	B	4			7	COACHELLA, RIVERSIDE COUNTY
1917	8	19	7	10		33.1	116.6	7			5	B	4			7	JULIAN, SAN DIEGO COUNTY
1917	8	28	0	40		37.3	118.4	1			5	B	4			35	BISHOP, OWENS VALLEY
1917	9	24	21	21		36.8	121.4	1	4.0	7	4	B	4			32	MONTEREY BAY TO HOLLISTER
1917	10	26	9	20		37.3	121.8	1	4.0	7	6	B	4			38	ON HAYWARD FAULT WEST OF MT. HAMILTON
1917	11	19	17	30		33.8	116.3	7			5	B	4			7	INDIO AND MECCA
1917	12	8	9	45		32.7	115.5	7			5	B	4			2	CALEXICO
1917	12	20	8	25		33.0	115.5	7	4.0	7	5	B	4			6	BRAWLEY
1918	2	11	22	45		37.3	118.4	1			5	B	4			35	BISHOP

Appendix A (continued)

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1918	3	6	18	20		34.0	118.5	7	4.0	7	6	B	4			16	SANTA MONICA AREA
1918	3	8	12	30		34.0	118.5	7			5	B	4			16	VENICE, LOS ANGELES COUNTY
1918	3	12	10	30		39.6	120.8	1			7	C	3			46	DOWNIEVILLE, SIERRA COUNTY
1918	3	12	12	30		39.6	120.8	1			5	C	7			46	DOWNIEVILLE, SIERRA COUNTY
1918	3	21	23	25		32.7	116.7	7			5	B	4			3	BARRETT DAM, SAN DIEGO COUNTY
1918	3	23	15	15		35.5	118.0	7			6	B	4			23	BROWN AND LITTLE LAKE, KERN AND INYO COUNTIES
1918	3	30	16	5		33.5	116.8	7			6	B	4			7	CAHUILLA, RIVERSIDE COUNTY
1918	4	17	6	43		40.8	124.2	1			5	B	4			55	EUREKA
1918	4	21	22	32	25	33.8	117.0	11	6.8	11	9	C	3	390	3	8	SAN JACINTO AND HEMET (3)
1918	4	22	21	15		33.8	117.6	7			6	C	3			8	CORONA, LOS ANGELES COUNTY
1918	4	23	14	15		33.8	116.9	7			5	B	4			7	HEMET AND SAN JACINTO
1918	4	29	2	0		33.8	116.9	7			5	B	4			7	SAN JACINTO
1918	5	1	4	32		32.5	115.5	3	5.0	7	6	C	3	80	3	2	IMPERIAL VALLEY
1918	5	2	17	12		32.7	115.5	7			5	B	4			2	CALEXICO
1918	5	3	4	25		32.6	116.5	7			5	B	4			3	CAMPO, SAN DIEGO COUNTY
1918	5	11	8	5		33.1	115.5	7			6	B	4			6	CALIPATRIA, IMPERIAL COUNTY
1918	6	3	16	5		37.2	118.6	1			5	B	4			35	18 MI. SOUTHWEST OF BISHOP
1918	6	6	22	32		33.8	117.0	7	5.0	7	6	B	4	78	4	8	SAN JACINTO, RIVERSIDE COUNTY
1918	6	14	10	24		33.8	116.9	7			5	B	4			7	HEMET
1918	6	22	5	57		33.1	116.8	7			5	B	4			7	SAN DIEGO MOUNTAINS
1918	7	15	0	23		41.0	125.0	1	6.5	11	6	C	3			75	OFF HUMBOLDT COUNTY COAST
1918	8	12	16	30		37.8	120.2	1			5	B	4			37	COULTERVILLE
1918	10	11	4	0		33.4	116.5	7	4.0	7	3	B	4	10	7	7	RIVERSIDE COUNTY
1918	10	14	12	5		32.7	115.5	7			5	B	4			2	CALEXICO
1918	11	19	20	18		34.0	118.5	3			6	C	3			16	SANTA MONICA BAY
1918	11	29	23	24		40.8	124.2	1			5	B	4			55	EUREKA AND TABLE BLUFF
1919	1	4	23	0		40.6	121.8	1			8	B	4			52	SHASTA COUNTY, POSSIBLY A LANDSLIDE
1919	1	20	9	25		38.3	122.3	1			5	B	4			44	NAPA COUNTY
1919	1	25	22	29		35.0	119.0	7	4.0	7	5	B	4	26	4	24	TEJON PASS AREA
1919	2	16	15	57		35.0	119.0	3	5.0	7	7	C	3	78	4	24	TEJON PASS AREA
1919	2	19	4	58		32.8	116.0	7	4.5	7	5	B	80			3	SOUTHWESTERN IMPERIAL COUNTY
1919	2	25	22	39		38.3	122.5	1	4.5	7	6	B	4			44	SONOMA COUNTY
1919	5	2	8	30		40.6	122.9	1			5	C	7			53	SHASTA COUNTY
1919	6	21	19	58		36.6	118.1	1			5	B	4			29	LONE PINE
1919	6	24	23	24		36.6	118.1	1			5	B	4			29	LONE PINE
1919	7	31	21	31		36.3	120.7	1			5	B	1			31	IDRIA, SAN BENITO COUNTY
1919	8	26	12	12		34.5	119.7	7			5	B	4			17	SANTA BARBARA AREA
1919	8	26	14	57		34.5	119.7	7			5	B	4			17	SANTA BARBARA AREA
1919	9	4	20	16		38.0	122.3	1			6	B	4			44	CONTRA COSTA COUNTY
1919	9	12	19	30		40.8	124.2	1			5	B	4			55	EUREKA
1919	9	15	14	7		40.8	124.2	1			7	B	4			55	EUREKA
1919	9	30	5	6		32.6	115.0	7			5	B	4			2	COLORADO RIVER DELTA
1919	9	30	7	37		32.5	115.0	3			6	B	80			2	EPICENTER PROBABLY IN BAJA CALIFORNIA
1919	10	1	19	31		33.0	114.5	7			6	B	4			5	IMPERIAL VALLEY AND COLORADO RIVER
1919	10	1	23	50		32.7	115.5	7			5	B	4			2	CALEXICO
1919	11	25	11	3		37.1	121.8	1	4.5	7	5	B	4	11	7	38	NORTHEAST OF SANTA CRUZ ON SAN ANDREAS FAULT
1919	12	11	23	27		37.0	122.0	1			5	B	4			39	SANTA CRUZ AREA
1919	12	19	13	59		38.3	119.5	94	5.2	94		A	94			41	BRIDGEPORT AREA
1920	1	1	2	35		33.2	116.7	7	5.0	7	6	C	3			7	NORTHERN SAN DIEGO COUNTY
1920	2	9	2	20		33.1	116.6	7			5	B	4			7	JULIAN AND MESA GRANDE

Appendix A (continued)

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1920	2	22	16	10		34.0	118.4	7			6	B	4			16	SAWTELLE, LOS ANGELES COUNTY
1920	4	14	23	45		42.9	122.1	3			5	C	3			80	CRATER LAKE, OREGON
1920	5	18	6	25		33.0	116.0	7	4.5	7	5	B	4			7	SAN DIEGO AND IMPERIAL COUNTIES
1920	5	20	13	30		32.7	117.2	7			5	B	4			4	SAN DIEGO
1920	6	16	12	9		36.6	121.7	1			5	B	4			32	SPRECKELS, MONTEREY COUNTY
1920	6	18	10	8		33.5	118.3	7	4.5	7	5	C	7			9	SAN PEDRO CHANNEL
1920	6	22	2	48		34.0	118.5	3	4.9	3	8	C	3	28	3	16	INGLEWOOD, LOS ANGELES COUNTY
1920	6	22	20	35		34.0	118.3	7			5	B	4			16	INGLEWOOD, LOS ANGELES COUNTY
1920	6	23	12	20		34.0	118.5	7			5	B	4			16	INGLEWOOD AND LOS ANGELES
1920	6	28	9	1		35.3	120.7	1			5	B	4			25	SAN LUIS OBISPO
1920	6	30	3	50		34.0	118.3	7			5	B	4			16	INGLEWOOD
1920	7	16	18	8		34.1	118.3	88			6	C	3	1	88	16	LOS ANGELES (88)
1920	7	16	20	22		34.1	118.3	7			6	B	4			16	LOS ANGELES
1920	7	16	21	27		34.1	118.3	7			6	B	88			16	LOS ANGELES
1920	7	16	21	30		34.1	118.3	7			6	B	88			16	LOS ANGELES
1920	7	23	3	55		40.5	121.8	1			7	C	3			52	SHASTA COUNTY
1920	7	26	12	15		34.1	118.3	7			5	B	4			16	LOS ANGELES
1920	9	9	16	47		37.3	121.9	1			5	B	4			38	SANTA CLARA COUNTY
1920	10	5	4	46		40.8	124.2	1			5	B	4			55	EUREKA
1920	10	5	19	4		36.6	121.7	1			5	B	4			32	MONTEREY PENINSULA
1920	10	12	17	48		33.2	116.6	7			7	B	4			7	NORTHERN SAN DIEGO CO.,RECORDED AT BERKELEY
1920	12	1	1	30		35.2	119.5	7			6	B	4			24	TAFT AND MARICOPA
1920	12	5	11	58		34.5	119.5	7	4.5	7	5	B	4	20	7	17	SANTA BARBARA
1920	12	18	17	26		33.8	116.9	7			5	B	4			7	HEMET
1920	12	20	5	29		33.0	115.5	7			5	B	4			6	IMPERIAL VALLEY
1920	12	20	14	47		33.0	115.5	7	4.5	7	7	B	4			6	IMPERIAL VALLEY
1920	12	21	14	52		33.0	115.5	7	4.5	7	7	B	4			6	IMPERIAL VALLEY
1920	12	29	9	59		39.5	122.2	1			5	B	4			48	GLENN COUNTY
1921	1	9	5	30		34.2	118.0	7			6	B	4			16	SAN GABRIEL VALLEY
1921	1	13	10	30		39.5	122.2	1			5	B	4			48	WILLOWS
1921	1	14	13	50		36.6	118.1	1			5	B	4			29	LONE PINE
1921	4	21	15	38		34.1	118.2	7			5	B	4			16	HOLLYWOOD AND LOS ANGELES
1921	6	12	3	42		36.8	122.0	1	4.0	7	6	B	1			33	MONTEREY BAY (99)
1921	7	21	20	15		40.7	120.8	1			6	B	1			51	NORTHERN SIERRA NEVADA
1921	7	21	20	17		40.7	120.8	1	4.0	7	6	C	3	4	7	51	NORTHERN SIERRA NEVADA (96)
1921	7	21	20	20		40.7	120.8	1			6	B	1			51	NORTHERN SIERRA NEVADA
1921	7	25	5	5		36.9	121.7	1	4.0	7	5	B	4	18	7	32	WATSONVILLE, SANTA CRUZ COUNTY (97)
1921	8	10	19	6		33.1	116.6	7			5	B	4			7	JULIAN, SAN DIEGO COUNTY
1921	8	10	21	51		33.1	116.6	7			5	B	4			7	JULIAN, SAN DIEGO COUNTY
1921	9	8	19	24		32.5	115.5	3	5.0	7	4	B	4			2	CALEXICO, RECORDED AT 16 SEISMOGRAPH STATIONS
1921	11	17	19	58		32.7	115.5	7			5	B	4			2	CALEXICO
1922	2	5	19	15		33.1	116.6	7			5	B	4			7	JULIAN, SAN DIEGO COUNTY
1922	3	10	11	21	20	35.8	120.3	1	6.5	11	9	C	3	260	3	25	CHOLAME VALLEY
1922	3	16	23	10		35.8	120.3	1	4.5	7	5	B	4			25	CHOLAME VALLEY
1922	6	16	21	0		32.5	115.5	7			5	B	4			2	BAJA CALIFORNIA
1922	8	18	5	12		35.8	120.3	1	5.0	7	7	B	4	65	3	25	CHOLAME VALLEY
1922	9	5	9	5		35.3	120.7	1			5	B	4			25	SAN LUIS OBISPO
1922	10	17	5	30		36.8	121.4	1			5	B	4			32	HOLLISTER
1923	1	11	4	29		42.0	120.5	3	5.0	7	6	B	4	69	7	80	GOOSE LAKE AREA, MODOC COUNTY

Appendix A (continued)

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1923	1	22	9	4	18	40.5	124.5	1	7.2	11	8	C	3			55	OFF CAPE MENDOCINO
1923	4	23	21	13		34.1	117.2	7			5	B	4			15	REDLANDS AND RIVERSIDE COUNTY
1923	4	29	2	31	29	41.0	125.0	1	5.0	1						75	OFF HUMBOLDT COUNTY COAST
1923	5	4	22	45		35.3	120.7	1			5	B	4			25	SAN LUIS OBISPO
1923	6	30	0	22		34.0	117.0	7	4.5	7	5	B	4			15	SAN BERNARDINO, FELT IN LOS ANGELES
1923	7	20	7	0		33.2	117.0	7			5	B	4			8	VALLEY CENTER, SAN DIEGO COUNTY
1923	7	23	7	30	26	34.0	117.3	11	6.3	11	7	C	3	180	3	15	SAN BERNARDINO AREA
1923	8	25	11	21		36.6	121.7	1			5	B	4			32	SPRECKELS AREA
1923	9	19	22	54		37.0	121.8	1	4.0	7	6	B	4	11	7	38	CORRALITOS, SANTA CRUZ COUNTY (95)
1923	11	5	22	7		32.5	115.5	3	5.0	7	7	C	3			2	IMPERIAL VALLEY
1923	11	7	23	57		32.5	115.5	3	5.5	7	7	C	3			2	IMPERIAL VALLEY
1924	3	9	11	33		36.6	121.7	1			5	B	4			32	SPRECKELS AREA
1924	4	3	23	54		37.3	121.7	1	4.5	7	6	B	4	19	7	38	SANTA CRUZ MOUNTAINS (72)
1924	10	24	7	39		33.0	115.5	7			6	B	4			6	BRAWLEY
1924	12	28	4	21		36.7	121.7	1	4.0	7	6	C	3	8	7	32	SALINAS (74)
1925	2	10	9	5		37.5	122.3	1			5	B	4			39	CRYSTAL SPRINGS LAKE-EAST BAY
1925	3	31	5	47		39.3	120.3	1			6	B	4			46	CENTRAL SIERRA NEVADA
1925	3	31	6	5		39.3	120.3	1			5	B	1			46	CENTRAL SIERRA NEVADA
1925	4	16	3	30		32.5	115.5	3			6	C	3			2	CALEXICO
1925	4	16	5	20		32.5	115.5	7			7	B	4			2	CALEXICO
1925	6	4	12	2	52	41.5	125.0	1	6.0	11						75	OFF HUMBOLDT COUNTY COAST, NOT FELT
1925	6	29	14	42	16	34.3	119.8	11	6.3	11	9	C	3	260	4	17	OFF SANTA BARBARA (202)
1925	7	3	16	38		34.3	119.8	7			7	B	4			17	SANTA BARBARA
1925	7	3	18	21		34.3	119.8	7			7	B	404			17	SANTA BARBARA
1925	7	19	19	24		37.3	122.0	1	4.0	7	5	B	4			39	EVERGREEN AREA, SANTA CLARA COUNTY (93)
1925	7	29	14	0		34.5	119.7	7			5	B	4			17	WASIOJA, SANTA BARBARA COUNTY
1925	8	8	10	13		33.5	117.0	7	4.5	7	5	C	7	22	7	8	RIVERSIDE AND SAN DIEGO COUNTIES
1925	8	12	18	45		34.4	119.3	7			5	B	4			17	OJAI AND VENTURA
1925	8	21	11	14		38.0	118.3	94	4.8	94	6	C	94			40	SOUTHWEST OF MINA, NEVADA
1925	8	31	1	7		33.0	115.5	7			5	B	4			6	BRAWLEY AND CALEXICO
1926	1	7	5	53		37.9	122.6	1			5	B	4			39	MARIN COUNTY
1926	2	18	18	18		34.0	119.5	3	5.0	7	6	C	3			17	BROKE WATER PIPE AND WINDOWS AT SANTA BARBARA
1926	4	3	20	8		34.0	116.0	3	5.5	7	5	C	7	155	3	14	STOPPED CLOCK IN SAN BERNARDINO
1926	5	3	13	53		34.0	119.5	4			5	C	7			17	SOUTH OF PT. HEUNEME
1926	6	24	15	30		34.4	119.7	7			5	B	4			17	SANTA BARBARA
1926	6	29	23	21		34.5	119.5	3	5.5	7	7	C	3	78	3	17	SANTA BARBARA AREA (202)
1926	6	30	13	31		35.6	118.8	7	5.0	7	7	B	4	78	4	23	SOUTHWESTERN SIERRA NEVADA, KERN COUNTY
1926	7	6	17	45		34.4	119.7	7			5	B	4			17	SANTA BARBARA
1926	7	25	17	57	49	36.6	120.8	1	5.0	7	6	C	3	78	3	31	NEAR IDRIA, SAN BENITO COUNTY
1926	8	9	4	12		34.4	119.7	7			5	B	4			17	SANTA BARBARA AND VENTURA
1926	9	28	17	49		34.3	119.3	7			5	B	4			17	VENTURA
1926	10	22	12	35		36.6	122.4	1	6.1	11	8	C	3	260	3	33	MONTEREY BAY (99)
1926	10	22	13	35	22	36.6	122.2	1	6.1	11	8	C	3	260	3	33	MONTEREY BAY (99)
1926	10	22	14	41	50	36.6	122.1	1			5	B	4			33	MONTEREY BAY (99)
1926	10	22	16	3	49	36.7	122.1	1	4.5	7		A	4			33	MONTEREY BAY (99)
1926	10	24	22	51	50	37.0	122.2	1	5.5	7	5	C	7	104	7	39	MONTEREY BAY (99)
1926	11	4	22	38		33.8	117.8	7			6	B	4			8	YORBA LINDA, ORANGE COUNTY

Appendix A (continued)

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1926	11	7	19	48		33.8	117.8	7			6	B	4			8	YORBA LINDA, ORANGE COUNTY
1926	11	9	15	35		33.8	117.8	7			6	B	4			8	YORBA LINDA, ORANGE COUNTY
1926	11	10	17	23		33.8	117.8	7			6	B	4			8	YORBA LINDA, ORANGE COUNTY
1926	12	9	5	48		32.7	115.5	7			5	B	4			2	CALEXICO
1926	12	27	9	19		36.2	120.3	1	5.0	7	6	B	4	65	4	31	COALINGA AREA, FRESNO COUNTY
1927	1	1	8	16	45	32.5	115.5	3	5.8	11	8	C	3	130	4	2	IMPERIAL VALLEY
1927	1	1	9	5		32.7	115.5	7			6	B	4			2	IMPERIAL
1927	1	1	9	13	30	32.5	115.5	3	5.5	11	8	C	3	130	3	2	IMPERIAL VALLEY
1927	1	1	10	10		32.7	115.5	7			6	B	4			2	IMPERIAL
1927	1	1	13	0		32.7	115.5	7			7	B	4			2	IMPERIAL
1927	1	2	16	0		32.7	115.5	7			5	B	4			2	CALEXICO
1927	1	4	9	35		40.5	124.1	1			5	B	4			55	HUMBOLDT COUNTY
1927	1	13	10	48		32.7	115.5	7			5	B	4			2	CALEXICO
1927	1	16	19	5		32.7	115.5	7			6	B	4			2	CALEXICO, IMPERIAL VALLEY
1927	1	29	23	24		34.0	118.4	7			5	B	4			16	SAWTELLE, LOS ANGELES COUNTY
1927	2	7	4	29		34.0	118.4	7			6	B	4			16	SAWTELLE, LOS ANGELES COUNTY
1927	2	12	8	58		32.8	115.5	7			6	B	4			2	FELT AS FAR AS YUMA, ARIZONA
1927	2	15	23	54		37.0	122.3	1	5.0	7	6	C	3	78	3	33	MONTEREY BAY (99)
1927	5	15	11	20		34.3	119.3	7			5	B	4			17	VENTURA
1927	5	28	17	39		37.3	121.9	75			6	C	3	8	75	38	EVERGREEN AREA, SANTA CLARA COUNTY (75)
1927	7	16	1	55		32.7	115.5	7			5	B	4			2	CALEXICO AND EL CENTRO
1927	8	4	12	24		34.0	118.5	3	5.0	7	6	C	3	21	3	16	SANTA MONICA BAY
1927	8	10	12	11		40.8	124.2	1			5	B	4			55	HUMBOLDT COUNTY
1927	8	14	14	48		32.8	116.8	7			6	B	4			3	SAN DIEGO COUNTY
1927	8	20	20	5	44	41.0	124.6	1	5.0	7	8	C	3			60	HUMBOLDT COUNTY
1927	8	26	12	40		34.4	119.7	7			5	B	4			17	SANTA BARBARA
1927	9	2	0	0		37.3	121.8	1			6	B	4			38	ALUM ROCK PARK, NEAR SAN JOSE
1927	9	16	8	40		40.8	124.2	1			5	B	4			55	EUREKA
1927	9	18	2	7		37.5	118.8	1	6.0	11	7	B	4	194	4	35	SIERRA NEVADA
1927	10	8	19	14		33.9	118.2	4			6	B	4			9	EAST OF COMPTON
1927	11	4	13	50	53	34.9	120.7	403	7.5	10	9	B	91			18	POINT SAL, SANTA BARBARA COUNTY
1927	11	19	3	32		35.0	120.5	3			6	C	3			25	SANTA MARÍA
1927	12	5	11	45		34.6	120.7	7			5	C	7			18	PT. ARGUELLO
1927	12	8	22	25		40.8	124.2	1			5	B	4			55	EUREKA AND DYERVILLE
1927	12	9	6	13		40.8	124.2	1			5	B	4			55	EUREKA AND SCOTIA
1927	12	31	10	10		34.6	120.7	7			5	B	4			18	PT ARGUELLO
1928	1	9	2	50		37.0	121.6	1			7	B	6			38	GILROY AREA
1928	3	26	16	27		38.3	117.5	94	4.7	94		A	94			70	TONOPAH, NEVADA
1928	3	29	6	25		34.9	120.4	7			7	B	6			18	SANTA MARIA
1928	4	15	21	57	15	39.8	122.7	73	4.5	1	8	B	73	30	7	48	GLENN COUNTY
1928	4	17	10	39		39.5	119.8	94	4.5	94	4	C	7			70	RENO, NEVADA
1928	6	4	5	30		40.8	122.9	1	4.5	7	7	C	3			53	WEAVERVILLE AREA
1928	6	9	8	22		35.2	119.5	7	4.0	7	5	C	7			24	KERN COUNTY
1928	9	5	14	42		34.0	116.0	3	5.0	7	5	C	3			14	MOJAVE DESERT
1928	9	12	1	20		37.0	120.1	1			6	B	6			37	MADERA
1928	9	23	17	44		32.7	115.5	7			5	B	6			2	CALEXICO AND EL CENTRO
1928	10	2	19	1		32.9	115.7	7	5.0	7		A	6	65	6	2	SAN JACINTO FAULT, NEAR SUPERSTITION MTN
1928	10	16	4	17		38.1	118.2	94	4.2	94						40	WESTERN NEVADA
1928	11	7	2	14		38.3	118.2	94	4.2	94						40	WESTERN NEVADA
1928	12	31	10	45		33.8	118.3	6			5	B	71			9	LOS ANGELES AREA

Appendix A (continued)

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1929	2	18	3	25		38.4	122.8	1			5	C	7			44	SANTA ROSA
1929	3	13	2	28		35.0	119.0	7	4.5	7	5	C	7	15	7	24	BAKERSFIELD
1929	5	5	1	7		34.0	118.0	7			6	B	71			16	SANTA FE PUMP STATION NEAR LOS NIETOS
1929	5	5	7	35		34.0	118.0	7			5	B	71			16	LOS NIETOS, LOS ANGELES COUNTY
1929	5	23	23	17		37.8	122.5	1			5	C	7			39	SAN FRANCISCO
1929	6	23	22	12		40.5	124.1	1			5	C	7			55	SCOTIA
1929	7	6	23	0		41.8	124.2	1			5	B	7			60	CRESCENT CITY
1929	7	8	16	46		33.9	118.1	10	4.7	10	8	C	10			9	WHITTIER
1929	7	23	11	55		32.8	116.2	7			5	C	7			3	DOS CABEZAS, SAN DIEGO COUNTY
1929	8	2	10	2		37.8	122.2	1			5	B	6			39	OAKLAND
1929	9	9	5	15		34.4	119.8	7			6	B	7			17	NAPLES
1929	9	13	13	23	38	33.6	118.2	201	4.0	98	5	C	7			9	SAN PEDRO CHANNEL
1929	9	26	20	0	23	34.8	116.5	201	5.1	98		A	6			14	NEAR NEWBERRY, MOJAVE DESERT
1929	10	15	7	57		40.5	124.1	1			5	B	7			55	EUREKA AND SCOTIA
1929	10	31	19	39	24	33.6	118.2	201	3.6	98	6	B	7			9	SAN PEDRO
1929	11	9	2	30	42	35.8	120.5	201	4.4	98	4	C	201			25	EPIC, KERN COUNTY
1929	11	26	8	5		36.4	121.0	1	4.5	7	5	C	7			32	SAN ARDO AREA, MONTEREY COUNTY
1929	11	28	19	49		36.9	118.2	1	5.5	7	7	C	3	90	3	29	BISHOP AREA
1929	12	2	7	0		37.0	118.2	1			7	B	7			35	ABERDEEN
1929	12	2	11	24		32.0	116.7	7	4.5	7	6	C	7			3	SAN DIEGO COUNTY
1929	12	3	9	5		34.0	117.7	7			5	B	7			15	CHINO, SAN BERNARDINO COUNTY
1929	12	4	12	29		40.5	124.0	1	4.5	7	5	C	7	15	7	55	HUMBOLDT COUNTY
1929	12	8	12	45		37.0	118.2	1			7	B	7			35	ABERDEEN
1930	1	9	8	6		36.8	121.5	7	4.5	7	6	B	7	5	6	32	SALINAS AREA
1930	1	9	8	16		36.8	121.5	7	4.5	7	6	B	7	5	6	32	SALINAS AREA
1930	1	9	9	56		36.8	121.5	7	4.0	7	6	B	7	6	7	32	SALINAS AREA
1930	1	16	0	24	34	34.2	116.9	201	5.2	3	7	C	3	130	3	14	SAN BERNARDINO MOUNTAINS
1930	1	16	0	34		34.2	116.9	201	5.1	3	7	C	3	130	3	14	SAN BERNARDINO MOUNTAINS
1930	1	27	20	26		34.1	118.0	7			6	B	7			16	ARCADIA, LOS ANGELES COUNTY
1930	2	7	23	23		32.0	116.0	7	4.5	7	5	B	6	21	6	3	JACUMBA, BAJA CALIFORNIA
1930	2	11	21	21		37.4	122.0	1	4.0	7	5	B	6	12	6	39	LOS ALTOS AREA
1930	2	26	2	30		33.0	115.5	3	5.0	3	8	C	3	52	3	6	IMPERIAL VALLEY
1930	3	1	23	5		33.0	115.5	7	4.5	98	7	B	7			6	IMPERIAL VALLEY
1930	3	1	23	44		33.0	115.5	3	4.5	3	8	C	3	28	3	6	IMPERIAL VALLEY
1930	3	2	1	50		33.0	115.5	7	4.5	7	4	B	6	26	6	6	IMPERIAL VALLEY
1930	3	27	21	30		40.7	124.3	1	4.0	7	3	B	6	7	7	55	HUMBOLDT COUNTY
1930	4	6	4	23		36.8	118.3	1	4.5	7		A	6			29	INDEPENDENCE AREA, EAST OF SIERRA NEVADA
1930	4	9	21	57		39.2	120.0	94	4.3	94	6	C	3	49	94	46	LAKE TAHOE AREA
1930	4	12	12	57		39.4	118.8	94	4.5	94	6	C	94	39	94	70	FALLON AREA, NEVADA
1930	4	29	20	13		40.6	122.9	1	4.0	7		A	6			53	REDDING AREA
1930	5	8	20	55		32.8	115.3	7			5	B	7			2	HOLTVILLE
1930	5	12	4	14		33.2	116.3	7	4.0	7		A	6			7	SOUTHEAST OF WARNER, SAN DIEGO COUNTY
1930	5	12	17	25	49	33.2	116.7	201	4.2	98	4	C	201			7	SOUTHEAST OF WARNER, SAN DIEGO COUNTY
1930	5	15	15	30		40.5	124.2	1	4.0	7		A	6	7	7	55	HUMBOLDT COUNTY
1930	5	29	7	12	16	35.5	117.2	201	4.1	98		A	6			22	NEAR SEARLES LAKE, SAN BERNARDINO COUNTY
1930	6	24	23	25		32.5	115.5	7	4.0	7		A	6			2	BAJA CALIFORNIA
1930	6	26	22	9		32.5	115.5	7	4.5	7	6	B	7			2	BAJA CALIFORNIA
1930	7	7	12	9		35.7	117.8	7	4.5	7		A	6			22	INYOKERN, EAST OF SIERRA NEVADA
1930	8	5	11	25		34.5	119.5	3	5.0	7	7	C	3	23	6	17	SANTA BARBARA AREA
1930	8	11	13	0		36.6	118.1	1	4.0	7	5	B	7			29	LONE PINE AREA, EAST OF SIERRA NEVADA
1930	8	18	13	9		34.4	120.2	201	3.8	98	5	B	6			18	OFF POINT CONCEPTION
1930	8	31	0	40	36	34.0	118.6	65	5.2	3	7	C	3	31	3	9	LOS ANGELES
1930	9	23	2	58		40.8	124.2	1	5.0	7	7	C	3	26	3	55	HUMBOLDT COUNTY

Appendix A (continued)

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1930	9	23	13	55		40.8	124.2	1	4.0	7	5	C	7	3	6	55	HUMBOLDT COUNTY
1930	10	1	0	40		34.0	118.4	7			6	B	7			16	CULVER CITY, LOS ANGELES COUNTY
1930	10	29	12	37		40.7	121.9	1	4.5	7	6	C	7	7	7	52	WHITEMORE AREA
1930	10	29	19	50		40.6	122.4	1	4.0	7	5	C	7			53	REDDING AREA
1930	11	10	5	11		36.9	118.2	1			5	B	7			29	ABERDEEN, EAST OF SIERRA NEVADA
1930	11	11	8	55		40.3	123.3	1			5	B	7			54	FOREST GLEN
1930	12	11	9	0		40.1	124.5	1	5.0	7	6	C	3	65	3	55	NORTHERN CALIFORNIA, PROBABLY OFF SHORE
1930	12	12	9	32		39.8	123.6	1	4.5	7	6	B	6	13	7	49	CUMMINGS AREA
1930	12	12	20	16		40.7	124.3	1	4.5	7	5	B	6	10	7	55	HUMBOLDT COUNTY
1931	1	5	9	43		37.6	122.4	1	4.0	7	5	C	6			39	SAN BRUNO AREA
1931	1	6	23	28	40	36.5	121.4	1	4.0	1	5	C	6			32	CHUALAR AREA, MONTEREY COUNTY
1931	1	8	13	53	00	34.9	117.1	201	3.8	98	5	C	7			15	BIG BEAR CITY AND BARSTOW
1931	1	17	8	7	21	37.6	118.1	201	4.1	98						35	WHITE MOUNTAINS, INYO AND MONO COUNTIES
1931	1	20	10	30		39.4	123.3	1	4.0	7	5	C	7			49	WILLITS AREA
1931	1	24	7	21		39.8	121.8	1	4.0	7	4	C	6			47	ORLAND AREA
1931	2	7	7	40		36.9	121.6	1			5	C	7			32	SARGENT
1931	2	16	13	27		34.1	117.3	7	4.0	7	5	C	6			15	RIVERSIDE AREA
1931	2	23	10	0	39	35.8	120.7	201	4.1	98	5	C	6	13	6	25	NORTHEAST OF PASO ROBLES
1931	2	23	10	33		35.8	120.7	7	4.5	7	5	C	6	13	6	25	NORTHEAST OF PASO ROBLES
1931	3	10	3	28	53	40.0	125.0	1	5.6	11	5	C	7			75	OFF CAPE MENDOCINO
1931	3	31	20	33		34.1	117.8	7	4.0	7	5	C	7			15	YORBA LINDA AND POMONA
1931	4	23	23	34		35.4	117.6	201	4.3	98	4	C	6			22	NEAR TRONA, EAST OF SIERRA NEVADA
1931	4	24	18	27	55	33.8	118.5	201	4.4	98	5	C	6	18	7	9	LOS ANGELES
1931	4	27	23	7	59	34.4	116.3	201	4.0	98		A	6			14	SOUTHERN MOJAVE DESERT
1931	6	5	11	30		40.3	124.3	1	4.0	7	5	C	7			55	PUNTA GORDA LIGHT STATION
1931	6	10	12	20		37.3	121.9	1	4.0	7	4	C	6	7	7	38	SAN JOSE AREA
1931	7	21	12	8		35.3	120.7	1	4.0	7	4	C	6	8	7	25	SAN LUIS OBISPO AREA
1931	8	17	3	20		42.3	122.8	3			5	C	3			80	TALENT, OREGON
1931	9	2	15	34	28	41.8	123.0	1	4.5	1						59	CALIFORNIA-OREGON BORDER
1931	9	9	13	40	30	40.8	125.0	1	5.8	11	6	C	3	39	3	75	OFF CAPE MENDOCINO
1931	9	10	4	36		33.8	116.6	7	4.0	7	4	C	6	8	7	7	RIVERSIDE COUNTY
1931	9	23	8	25		37.1	118.2	1	4.5	7	6	C	6			35	ABERDEEN AREA
1931	10	9	19	50		36.7	121.7	1	4.0	7	5	C	6			32	SALINAS AREA
1931	10	18	19	58		36.3	121.7	1	4.0	7	4	C	6	6	7	32	JAMESBURG AREA
1931	11	3	16	5		33.8	118.3	6	4.0	7	5	C	6			9	LOS ANGELES
1931	11	25	12	18		37.2	118.3	7	4.0	7	5	B	7			35	ABERDEEN AREA
1931	12	4	0	53		36.5	121.7	1	4.0	7	5	B	7			32	HOLLISTER AREA
1931	12	15	16	20		39.8	120.5	1	4.0	7		A	6	7	7	46	PORTOLA AREA
1931	12	19	6	0		38.0	123.0	1	4.0	7	5	C	6			45	POINT REYES AREA

California Earthquakes of Magnitude 5 and Greater, 1900 through 1931

Description of column headings is the same as in Appendix A.

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1901	3	3	7	45		36.0	120.5	3	5.5	7	8	C	3	104	3	31	STONE CANYON-PARKFIELD
1902	5	19	18	31		38.3	121.9	7	5.5	7	8	C	3	52	3	43	ELMIRA AREA, SOLANO COUNTY
1902	7	31	9	20		34.7	120.3	7	5.5	7	8	C	7			18	LOS ALAMOS, SANTA BARBARA COUNTY
1903	6	11	13	12		37.6	121.8	7	5.5	7	7	C	3	150	7	38	EAST SAN FRANCISCO BAY
1903	8	3	6	49		37.3	121.8	7	5.5	7	7	C	3	130	4	38	SAN JOSE-MT. HAMILTON REGION
1905	1	6	14	30		35.5	118.7	7	5.0	7	5	C	7	50	7	23	KERN RIVER AREA
1905	12	23	22	23		35.3	118.8	7	5.0	7	8	B	4			23	BAKERSFIELD, FELT LOS ANGELES TO VISALIA
1906	4	18	13	12	21	37.7	122.5	100	8.3	11	11	C	3	975	12	39	SAN FRANCISCO EARTHQUAKE (12 AND 100)
1906	4	19	0	30		32.5	115.5	10	6.0	10	8	C	3	100	7	2	BRAWLEY
1907	9	20	1	54		34.2	117.1	10	6.0	10	7	C	3	130	3	15	SAN BERNARDINO AREA
1908	8	18	10	59		40.8	124.0	7	5.0	7	7	C	3			55	HUMBOLDT COUNTY
1908	11	4	8	37		36.0	117.0	10	6.5	10	8	B	4			28	DEATH VALLEY
1909	3	3	12	0		39.4	120.9	7	5.0	7	6	C	7	50	7	47	NEVADA COUNTY
1909	6	23	7	24		39.4	120.8	7	5.5	7	7	C	3	130	4	46	SIERRA COUNTY
1909	10	29	6	45		40.5	124.2	7	6.0	10	8	C	3	260	3	55	HUMBOLDT COUNTY
1910	3	11	6	52		36.9	121.8	7	5.5	7	6	C	3	155	3	32	MONTEREY BAY REGION
1910	3	19	0	11		40.0	125.0	10	6.0	10	5	C	7			75	HUMBOLDT COUNTY, PROBABLY SUBMARINE ORIGIN
1910	4	11	7	57		33.7	117.4	4	5.0	7		A	4	30	7	8	ORANGE COUNTY - RIVERSIDE COUNTY
1910	5	6	16	40		37.3	118.4	1	5.5	7	7	B	4	130	4	35	OWENS VALLEY
1910	5	13	6	20		33.7	117.4	4	5.0	7	5	B	4	40	7	8	LAKE ELSINORE AREA
1910	5	15	15	47		33.7	117.4	10	6.0	10	7	C	3	75	7	8	LAKE ELSINORE AREA
1910	12	31	12	11		36.8	121.4	1	5.0	7	7	B	4	20	7	32	HOLLISTER AREA
1911	7	1	22	0		37.3	121.8	1	6.6	11	8	C	3	155	3	38	20 MILES SOUTH OF MOUNT HAMILTON
1912	1	5	3	54		37.3	118.4	1	5.5	7	7	B	4	130	4	35	BISHOP AREA, INYO COUNTY
1914	2	18	18	17		39.5	119.8	94	5.0	7	7	C	94	42	7	70	TRUCKEE MEADOWS AREA
1914	4	24	8	34		39.5	119.8	94	6.4	94	8	C	94	260	94	70	WESTERN NEVADA
1914	11	9	2	31		37.2	122.0	1	5.5	7	7	C	3	78	4	39	SANTA CRUZ MOUNTAINS
1915	1	12	4	31		34.7	120.3	7	5.5	7	8	C	3	130	4	18	LOS ALAMOS, SANTA BARBARA COUNTY
1915	4	5	23	11		38.6	119.5	1	5.0	7	5	B	4	65	4	41	CENTRAL SIERRA NEVADA
1915	5	29	6	46		36.1	118.8	1	5.0	7	5	B	4	40	7	29	SOUTHERN SIERRA NEVADA
1915	6	23	3	59		32.8	115.5	10	6.3	10	8	C	3	200	3	2	IMPERIAL VALLEY
1915	6	23	4	56		32.8	115.5	10	6.3	10	8	C	3	200	3	2	IMPERIAL VALLEY
1915	11	21	0	13	42	32.0	115.0	11	7.1	11	7	C	3	310	3	2	VOLCANO LAKE, BAJA CALIFORNIA
1916	8	6	19	38		36.7	121.3	1	5.5	7	7	C	3	78	4	32	PAICINES AREA, SAN BENITO COUNTY
1916	9	30	2	11		33.5	116.5	7	5.0	7	5	B	4	52	4	7	JULIAN AREA, SAN DIEGO COUNTY
1916	10	23	2	44		34.9	118.9	11	6.0	10	7	C	3	130	4	16	TEJON PASS
1916	10	23	2	54		34.7	119.0	7	5.5	7	6	B	4	70	7	17	TEJON PASS
1916	11	10	9	11		36.0	117.0	7	5.5	7	5	B	4			28	NEAR DEATH VALLEY, REFERENCE 94 ASSIGNED M=6.1
1917	5	28	6	6		32.8	115.3	7	5.5	7	8	B	4	104	4	2	SOUTHEAST OF HOLTVILLE, IMPERIAL COUNTY
1918	4	21	22	32	25	33.8	117.0	11	6.8	11	9	C	3	390	3	8	SAN JACINTO AND HEMET (3)
1918	5	1	4	32		32.5	115.5	3	5.0	7	6	C	3	80	3	2	IMPERIAL VALLEY
1918	6	6	22	32		33.8	117.0	7	5.0	7	6	B	4	78	4	8	SAN JACINTO, RIVERSIDE COUNTY
1918	7	15	0	23		41.0	125.0	1	6.5	11	6	C	3			75	OFF HUMBOLDT COUNTY COAST
1919	2	16	15	57		35.0	119.0	3	5.0	7	7	C	3	78	4	24	TEJON PASS AREA
1919	12	19	13	59		38.3	119.5	94	5.2	94		A	94			41	BRIDGEPORT AREA
1920	1	1	2	35		33.2	116.7	7	5.0	7	6	C	3			7	NORTHERN SAN DIEGO COUNTY
1921	9	8	19	24		32.5	115.5	3	5.0	7	4	B	4			2	CALEXICO, RECORDED AT 16 SEISMOGRAPH STATIONS
1922	3	10	11	21	20	35.8	120.3	1	6.5	11	9	C	3	260	3	25	CHOLAME VALLEY
1922	8	18	5	12		35.8	120.3	1	5.0	7	7	B	4	65	3	25	CHOLAME VALLEY
1923	1	11	4	29		42.0	120.5	3	5.0	7	6	B	4	69	7	80	GOOSE LAKE AREA, MODOC COUNTY
1923	1	22	9	4	18	40.5	124.5	1	7.2	11	8	C	3			55	OFF CAPE MENDOCINO
1923	4	29	2	31	29	41.0	125.0	1	5.0	1						75	OFF HUMBOLDT COUNTY COAST
1923	7	23	7	30	26	34.0	117.3	11	6.3	11	7	C	3	180	3	15	SAN BERNARDINO AREA
1923	11	5	22	7		32.5	115.5	3	5.0	7	7	C	3			2	IMPERIAL VALLEY
1923	11	7	23	57		32.5	115.5	3	5.5	7	7	C	3			2	IMPERIAL VALLEY
1925	6	4	12	2	52	41.5	125.0	1	6.0	11						75	OFF HUMBOLDT COUNTY COAST, NOT FELT

Appendix B (continued)

Y	M	D	H	M	S	LAT N	LONG W	REF	M	REF	I	TYPE	REF	AREA	REF	REGION	COMMENTS
1925	6	29	14	42	16	34.3	119.8	11	6.3	11	9	C	3	260	4	17	OFF SANTA BARBARA (202)
1926	2	18	18	18		34.0	119.5	3	5.0	7	6	C	3			17	BROKE WATER PIPE AND WINDOWS AT SANTA BARBARA
1926	4	3	20	8		34.0	116.0	3	5.5	7	5	C	7	155	3	14	STOPPED CLOCK IN SAN BERNARDINO
1926	6	29	23	21		34.5	119.5	3	5.5	7	7	C	3	78	3	17	SANTA BARBARA AREA (202)
1926	6	30	13	31		35.6	118.8	7	5.0	7	7	B	4	78	4	23	SOUTHWESTERN SIERRA NEVADA, KERN COUNTY
1926	7	25	17	57	49	36.6	120.8	1	5.0	7	6	C	3	78	3	31	NEAR IDRIA, SAN BENITO COUNTY
1926	10	22	12	35		36.6	122.4	1	6.1	11	8	C	3	260	3	33	MONTEREY BAY (99)
1926	10	22	13	35	22	36.6	122.2	1	6.1	11	8	C	3	260	3	33	MONTEREY BAY (99)
1926	10	24	22	51	50	37.0	122.2	1	5.5	7	5	C	7	104	7	39	MONTEREY BAY (99)
1926	12	27	9	19		36.2	120.3	1	5.0	7	6	B	4	65	4	31	COALINGA AREA, FRESNO COUNTY
1927	1	1	8	16	45	32.5	115.5	3	5.8	11	8	C	3	130	4	2	IMPERIAL VALLEY
1927	1	1	9	13	30	32.5	115.5	3	5.5	11	8	C	3	130	3	2	IMPERIAL VALLEY
1927	2	15	23	54		37.0	122.3	1	5.0	7	6	C	3	78	3	33	MONTEREY BAY (99)
1927	8	4	12	24		34.0	118.5	3	5.0	7	6	C	3	21	3	16	SANTA MONICA BAY
1927	8	20	20	5	44	41.0	124.6	1	5.0	7	8	C	3			60	HUMBOLDT COUNTY
1927	9	18	2	7		37.5	118.8	1	6.0	11	7	B	4	194	4	35	SIERRA NEVADA
1927	11	4	13	50	53	34.9	120.7	403	7.5	10	9	B	91			18	POINT SAL, SANTA BARBARA COUNTY
1928	9	5	14	42		34.0	116.0	3	5.0	7	5	C	3			14	MOJAVE DESERT
1928	10	2	19	1		32.9	115.7	7	5.0	7		A	6	65	6	2	SAN JACINTO FAULT, NEAR SUPERSTITION MTN
1929	9	26	20	0	23	34.8	116.5	201	5.1	98		A	6			14	NEAR NEWBERRY, MOJAVE DESERT
1929	11	28	19	49		36.9	118.2	1	5.5	7	7	C	3	90	3	29	BISHOP AREA
1930	1	16	0	24	34	34.2	116.9	201	5.2	3	7	C	3	130	3	14	SAN BERNARDINO MOUNTAINS
1930	1	16	0	34		34.2	116.9	201	5.1	3	7	C	3	130	3	14	SAN BERNARDINO MOUNTAINS
1930	2	26	2	30		33.0	115.5	3	5.0	3	8	C	3	52	3	6	IMPERIAL VALLEY
1930	8	5	11	25		34.5	119.5	3	5.0	7	7	C	3	23	6	17	SANTA BARBARA AREA
1930	8	31	0	40	36	34.0	118.6	65	5.2	3	7	C	3	31	3	9	LOS ANGELES
1930	9	23	2	58		40.8	124.2	1	5.0	7	7	C	3	26	3	55	HUMBOLDT COUNTY
1930	12	11	9	0		40.1	124.5	1	5.0	7	6	C	3	65	3	55	NORTHERN CALIFORNIA, PROBABLY OFF SHORE
1931	3	10	3	28	53	40.0	125.0	1	5.6	11	5	C	7			75	OFF CAPE MENDOCINO
1931	9	9	13	40	30	40.8	125.0	1	5.8	11	6	C	3	39	3	75	OFF CAPE MENDOCINO

APPENDIX C

Data Sources Referred to in Appendices A and B

The data sources are listed in order of increasing reference numbers. The reference numbers are those employed in the CDMG earthquake catalog files and are not numerically continuous.

1 Seismographic stations, University of California, Berkeley, 1976, Magnetic tape catalog of earthquakes in northern California, 1910–1974.

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6 U.S. Department of Commerce, Coast and Geodetic Survey, 1928–1931, United States earthquakes: Annual publications, Washington, D.C.

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96 Kemnitzer, W., 1921, The Eagle Lake earthquake of July 21, 1921: Bulletin of the Seismological Society of America, v. 11, p. 192–194.

97 Kemnitzer, W., 1921, The Chittenden earthquake of July 14, 1921: Bulletin of the Seismological Society of America, v. 11, p. 189–191.

98 Richter, C.F., 1935, An instrumental earthquake magnitude scale: Bulletin of the Seismological Society of America, v. 25, p. 1–32.

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404 Hamilton, R.M., R.F. Yerkes, R.D. Brown, Jr., R.O. Burford, and J.M. DeNoyer, 1969, Seismicity and associated effects, Santa Barbara region: U.S. Geological Survey Professional Paper 679–D, p. 47–77.

APPENDIX D

Modified Mercalli Intensity Scale of Wood and Neumann, and its Relation to the Rossi–Forel Scale

The numbers in parentheses in the left margin and the initials R.F. refer to the Rossi–Forel intensity scale.

I — Nat felt — ar, except rarely under especially favarable circumstances.

[I R.F.] Under certain conditians, at and autside the baundary af the area in which a great shack is felt:
sametimes birds, animals, reparted uneasy ar disturbed;
sametimes dizziness ar nausea experienced;
sametimes trees, structures, liquids, bodies of water, moy swoy—daors moy swing, very slowly.

II — Felt indaars by few, especially an upper flaars, ar by sensitive, ar nervaus persans.

[I to II R.F.] Alsa, as in grade 1, but aften mare naticeably:
sametimes hanging abjects may swing, especiolly when delicotely suspended;
sametimes trees, structures, liquids, badies af woter, may swoy, daars may swing, very slawly;
sametimes birds, animals, reparted uneasy ar disturbed;
sametimes dizziness or nausea experienced.

III — Felt indaors by several, matian usually rapid vibratian.

[III R.F.] Sametimes nat recagnized ta be an earthquake at first.
Duratian estimated in same cases.
Vibratian like that due ta passing af light, ar lightly laaded trucks, ar heavy trucks same distance away.
Hanging abjects may swing slightly.
Mavements may be appreciable an upper levels af tall structures.
Racked standing matar cars slightly.

IV — Felt indaors by mony, autdaars by few.

[IV to V R.F.] Awakened few, especially light sleepers.
Frightened na ane, unless apprehensive fram previaus experience.
Vibratian like that due ta passing af heavy, ar heavily laaded trucks.
Sensation like heovy bady striking building, ar falling of heovy abjects inside.
Rattling af dishes, windaws, daars; glassware and crackery clink and clash.
Creaking af walls, frame, especially in the upper range af this grade.
Hanging objects swung, in numerous instances.
Disturbed liquids in apen vessels slightly.
Racked standing matar cars naticeably.

V — Felt indaars by practically all, autdaars by many ar most: autdaors directian estimated.

'I R.F.] Awakened many, ar mast.
Frightened few—slight excitement, a few ran autdaars.
Buildings trembled throughaut.
Brake dishes, glassware, ta same extent.
Cracked windows—in some cases, but not generally.
Overturned vases, small ar unstable abjects, in many instances, with accasianal foll.
Hanging abjects, daars, swing generally ar considerably.
Knacked pictures against walls, ar swung them aut af place.
Opened, ar clased, daors, shutters, abruptly.
Pendulum clacks stapped, started, ar ran fast, ar slaw.
Maved small abjects, furnishings, the latter ta slight extent.
Spilled liquids in small amaunts from well–filled apen cantainers.
Trees, bushes, shaken slightly.

VI — Felt by all, indaars and autdoors.

[VI to VII R.F.] Frightened many, excitement general, same alarm, many ran autdoars.
Awakened all.
Persans made ta mave unsteadily.
Trees, bushes, shaken slightly, maderately.
Liquid set in strong motion.
Small bells rang—church, chapel, schaal, etc.

Appendix D (continued)

Damage slight in paarly built buildings.
Fall of plaster in small amount.
Cracked plaster samewhat, especially fine cracks; chimneys in some instances.
Brake dishes, glassware, in considerable quantity, alsa same windaws.
Fall af knick–knacks, baaks, pictures.
Overturned furniture in many instances.
Maved furnishings af maderately heavy kind.

VII — Frightened oll—general alarm, all ran autdaars.
Some, ar many, faund it difficult ta stand.
[VIII – R.F.] Naticed by persans driving matar cars.
Trees and bushes shaken maderately ta strongly.
Waves an ponds, lakes, and running water.
Water turbid fram mud stirred up.
Incaving ta same extent of sand ar gravel stream banks.
Rang large church bells, etc.
Suspended abjects made ta quiver.

Damage negligible in buildings af goad design and canstructian, slight to moderate in well–built ardinary buildings, cansiderable in paarly built ar badly designed buildings, adabe hauses, ald walls (especially where laid up withaut martar), spires, etc.
Cracked chimneys ta considerable extent, walls to some extent.
Fall of plaster in cansiderable ta large amaunt, alsa same stucca.
Brake numeraus windaws, furniture ta same extent.
Shaak dawn laasened brickwark and tiles.
Brake weak chimneys at the raaf–line (sometimes domaging raafs).
Fall of cornices from towers and high buildings.
Disladged bricks and stanes.
Overturned heavy furniture, with damage fram breaking.
Damage cansiderable ta cancrete irrigatian ditches.

VIII — Fright general—alarm appraaches panic.
Disturbed persans driving motar cors.
[VIII+ to IX – R.F.] Trees shaken strangly—branches, trunks, braken aff, especially palm trees.
Ejected sond and mud in small amaunts.
Changes: temparary, permanent; in flaw af springs and wells; dry wells renewed flaw; in temperature af spring and well waters.
Domoge slight in structures (brick) built especially ta withstand earthquakes.
Cansiderable in ordinary substantial buildings, partial callapse, racked, tumbled dawn, waoden hauses in some cases; threw aff panel walls in frame structures, broke aff decayed piling.
Fall of walls.
Crocked, brake, salid stane walls seriously.
Wet ground ta same extent, alsa graund an steep slapes.
Twisting, fall, af chimneys, calumns, monuments, alsa factary stacks, towers.
Moved canspicuausly, averturned, very heavy furniture.

IX — Panic general.
Cracked graund canspicuausly.
[IX+ R.F.] Damage cansiderable in (masanry) structures built especially ta withstand earthquakes:
threw aut af plumb same wood–frame hauses built especially ta withstand earthquakes;
greot in substantial (masanry) buildings, same callapse in large part;
ar wholly shifted frame buildings aff faundatians, racked frames;
seriaus ta reservairs; undergraund pipes sametimes braken.

X — Cracked graund, especially when laase and wet, up ta widths af several inches; fissures up ta a yard in width ran parallel ta canal and stream banks.
[X R.F.] Landslides considerable fram river banks ond steep caasts.
Shifted sond and mud harizantally an beaches and flat land.
Changed level af woter in wells.
Threw water an banks of canals, lakes, rivers, etc.

Appendix D (continued)

Damoge seriaus ta dams, dikes, embankments.
Severe ta well–built waaden structures and bridges, same destrayed.
Develaped dangeraus cracks in excellent brick wolls.
Destrayed mast masanry and frame structures, alsa their faundatians.
Bent railraad rails slightly.
Tare apart, ar crushed endwise, pipe lines buried in earth.
Open cracks and braad wavy falds in cement pavements and asphalt raad surfaces.

XI Disturbances in graund many and widespread, varying with ground materiol.
Brood fissures, earth slumps, and land slips in saft, wet graund.
Ejected water in large amaunt charged with sand and mud.
Caused sea–waves ("tidal" waves) af significant magnitude.
Damage severe ta waad–frame structures, especially near shack centers.
Great ta dams, dikes, embankments, aften far lang distances.
Few, if any, (masanry) structures remained standing.
Destrayed lorge well–built bridges by the wrecking af supporting piers, ar pillars.
Affected yielding woaden bridges less.
Bent railraad rails greotly, ond thrust them endwise.
Put pipe lines buried in earth completely aut af service.

XII Damage tatal—practically all warks af canstructian damoged greatly or destroyed.
Disturbances in graund great and varied, numeraus sheoring cracks.
Landslides, falls af rack af significant character, slumping of river banks, etc., numerous and extensive.
Wrenched laase, tare off, large rack masses.
Fault slips in firm rack, with natable harizantal and vertical affset displacements.
Woter channels, surface and undergraund, disturbed and madified greatly.
Dammed lakes, praduced waterfalls, deflected rivers, etc.
Waves seen an graund surfaces (actually seen, prabobly, in same coses).
Distarted lines af sight and level.
Threw abjects upward inta the air.

APPENDIX E

Newspapers Searched

An asterisk means that earthquake intensity information was extracted from the newspaper and is available in the CDMG files.

ALAMEDA COUNTY

Ookland Tribune

1901 March 2, 4, 5
1902 May 19*, 20
1903 June 11*, 12*
August 3*, 4
1909 February 14, 15, 16
1926 October 24, 25
1927 February 15, 16*

AMADOR COUNTY

Amador Dispotch (Jackson)

1902 May 23*, 30*
1908 June 5, 12

Amodor Ledger (Jockson)

1908 January 27
June 5, 12
1909 July 2*
1914 February 20, 27

BUTTE COUNTY

Chico Record

1902 May 20*, 23
1903 June 12, 16
August 4, 7
1908 May 30, 31*
June 2
1909 March 3, 4, 5
June 23*, 24
October 29*, 30

Oroville Mercury

1908 May 30
June 2, 3
1909 March 3, 4, 5
June 23*
October 29, 30
November 1
1914 February 18, 19 20

CALAVERAS COUNTY

Coloveras Chronicle (Mokelumne Hill)

1908 May 30
June 6

Coloveros Prospect (Son Andreos)

1908 May 30
June 6, 13
1909 March 6*, 13
June 26
July 3
1910 March 12, 19

COLUSA COUNTY

Colusa Sun

1902 May 19*
July 29*, 31*
1903 June 11*
1904 July 30
August 1, 2
1906 April 23*, 24*
June 8, 9, 11
1908 January 27, 28, 29
June 1*, 2, 3
1909 March 3, 4, 5
June 23*, 24*, 25
October 30
November 2, 4, 6, 9
1910 August 5, 6, 8

CONTRA COSTA COUNTY

Antioch Ledger

1909 February 20*, 27
1927 February 17, 24

Byron Times

1910 March 11, 17

Contro Costo Gozette (Mortinez)

1901 March 2, 9
1902 May 24*, 31
1903 June 13*, 20
August 8, 15
1904 August 1, 8
1909 February 20*, 27
June 11, 18, 25
1910 June 11, 18, 25
1927 February 15, 16

Contro Costo Stondord (Mortinez)

1910 March 12, 19

Concord Transcript

1910 March 12, 17

Mortinez Daily Stondord

1927 February 15, 16*

Richmond Independent

1910 June 9, 10, 11, 12

DEL NORTE COUNTY

Del Norte Record (Crescent City)

1906 April 28*
May 5, 12*, 19
June 9, 16
1908 August 22, 29
1909 October 30*
November 6

Del Norte Triplicate (Crescent City)

1913 November 28
December 5, 12

EL DORADO COUNTY

El Dorado Republican (Placerville)

1908 June 4*, 11
1909 October 29
November 5
1914 May 1, 8, 15

El Dorado Republican and Nugget (Placerville)

1909 March 4, 11
June 25
July 2

Georgetown Gazette

1914 February 19*, 26
April 30
May 7, 14

FRESNO COUNTY

Fowler Ensign

1910 March 12, 19
1916 January 26
February 2
1926 July 1, 8

Fresno Bee

1925 June 29*
1926 June 30
July 1
October 25
December 27*
1927 February 15, 16
November 19, 20

Fresno Republican

1901 March 3, 5, 6
1905 January 6, 7, 8
1910 March 10, 11, 12
1916 January 23, 24, 25

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Willows Review

1909 October 29
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1904 July 30, 31
August 1, 2
1906 April 24*, 25, 26
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1908 August 18*, 19*, 20
1909 May 18*, 19, 20
1910 August 5*, 7, 9

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1908 August 21*, 28
1909 May 21*, 28
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1910 March 25

Humboldt Standard (Eureka)

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1907 August 12
1908 August 18*, 19*, 20, 21*, 22*, 24*, 25, 26, 27
1909 May 18*, 19, 20, 21
October 29*, 30*
November 1*, 2*, 3, 4*, 5, 6, 8*, 9, 10, 11
1910 August 5*, 6, 8*, 9, 10, 11

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1906 May 10, 17*
1908 August 20, 27
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Calexico Chronicle

1906 March 9*, 15
April 26
1910 May 19, 26
1917 May 28, 29
June 1
1923 November 5*, 7, 8*
1925 April 16*
1928 September 5, 6, 7

El Centro Progress

1917 May 29*, 30, 31

Imperial Valley Press (El Centro)

1917 May 28*, 29*, 30
1925 April 17, 18
1928 September 5, 6

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Inyo Independent (Independence)

1905 January 6, 13
December 29
1906 January 5
1909 March 5, 12
1910 May 6*, 13
1914 February 19, 26
1926 April 3, 10
July 3, 10

Inyo Register (Bishop)

1916 November 16, 23
1926 April 8, 15
July 1, 8

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Bakersfield Californian

1901 March 2, 4, 5
1902 July 28, 29*, 30
1903 August 3*
1905 January 6*, 7, 9
December 23*, 25
1907 September 30
1916 January 23, 24, 25
November 10, 11
1917 July 10, 11
1918 June 6, 7, 8
1925 June 29*, 30*

1926 February 18, 19
April 3, 5
June 29*, 30*
July 1
October 25
December 27*
1927 November 19, 21
1928 September 5, 6
1931 April 23, 24

Bakersfield Daily Sun

1902 August 1*

Morning Echo (Bakersfield)

1905 January 6, 7*, 8*, 10
December 23, 24*, 27, 28
1915 January 11, 12, 13
1916 January 23, 25, 26

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Hanford Journal

1916 January 23, 25, 26

Hanford Sentinel

1901 March 7*
1902 July 31*
1903 July 4*
August 6*
1905 December 28*
1906 January 4
1910 May 19*
1916 November 16, 23
1926 February 18*
June 29, 30*

LAKE COUNTY

Clear Lake Press (Lakeport)

1910 March 12, 19

Lake County Bee (Lakeport)

1902 May 21, 22
1906 April 25
May 2
June 13, 20
1909 November 4, 11

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Big Valley Gazette (Bieber)

1909 March 4, 11
June 24
July 1
November 4, 11
1914 February 19, 26

Lassen Advocate (Susanville)

1908 January 31
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1909 March 5, 12*
June 25*
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October 29
November 5
1914 February 20
1915 February 26
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1923 January 12, 19

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Los Angeles Herald

1905 December 23, 24*, 25, 26

Los Angeles Times

1901 March 2, 3, 4*
1902 May 22, 23*
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August 1*
1905 January 6, 7, 8
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1906 March 3, 4, 5, 6, 7*
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1907 September 20*, 21
1908 July 3, 4*, 5
1910 May 15, 16*, 17*
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1911 May 10, 11, 12
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1914 November 8, 9*
1915 January 11, 12*, 13
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1925 June 30*
1926 February 18, 19*
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1927 November 19, 20
1928 September 5, 6
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1931 April 24, 25

Los Angeles Record

1905 December 23, 25, 26

Pasadena News

1905 December 23, 26, 27

Pasadena Star–News

1926 February 18, 19
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Santa Monica Daily Outlook

1902 July 28, 29, 30
1905 December 23, 26, 27
1907 December 23, 26, 27
1911 May 10*, 11, 12
1915 January 11, 12*, 13

Venice Evening Vanguard

1914 November 9*
1916 January 24, 25, 26
1925 June 29*
1926 February 18*
June 29, 30*
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MADERA COUNTY

Madera Mercury

1910 March 12*, 19
May 7*, 14
1926 June 30

MARIN COUNTY

Marin Journal (San Rafael)

1902 May 22, 29
1927 February 17*

Marin Tocsin (San Rafael)

1902 May 24, 31
1903 June 13*, 20
August 8, 15
1904 July 30
August 6
1910 March 13, 20

Sausalito News

1927 February 19*

MARIPOSA COUNTY

Mariposa Gazette

1908 May 30
June 6
1926 April 5, 9

MENDOCINO COUNTY

Mendocino Beacon

1909 October 30*

Ukiah Republican Press

1913 October 28
December 5, 12

MERCED COUNTY

Merced Express

1904 July 30
August 6

Merced Sun–Star

1927 February 15, 16

MODOC COUNTY

Alturas New Era

1904 April 22
July 6
August 3, 10
1906 April 25
May 2, 13, 20
1909 June 23, 30
November 3, 10
1914 February 18, 25
1923 January 17*, 24

Alturas Plaindealer

1914 Februrary 20, 27
1923 January 12*, 19

Modoc Republican (Alturas)

1914 February 20, 27

MONO COUNTY

Bridgeport Chronicle–Union

1914 February 21, 28

MONTEREY COUNTY

Carmel Pine Cone

1926 October 22, 29
1927 February 18*, 25

King City Herald

1926 July 2, 9
1927 February 18*, 25

Pacific Grove Review

1902 May 24, 31
1903 June 13*
August 8*

Salinas Daily Index

1910 March 10, 11*, 12

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Napa Journal

1902 May 23*, 30
1903 June 12, 19
August 7, 14
1904 August 5, 12
1926 October 24, 26
1927 February 15, 16, 18

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1902 May 23, 30
1903 June 12, 19
August 7, 14
1904 August 5, 12
1910 June 10, 17, 24

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Grass Valley Daily Morning Union

1903 June 11, 12, 13
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1908 May 30, 31*
June 2
1909 June 23*, 24*
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1910 August 5*, 6, 7
1914 February 18, 19, 20

Grass Valley Union and Herald

1902 May 20*, 21

Truckee Republican

1908 May 30
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1909 March 3, 6, 10
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1914 February 19*, 26

ORANGE COUNTY

Anaheim Gazette

1901 March 7, 14
1907 September 26
October 3
1910 May 19*
1914 November 12*
1916 December 7, 14
1918 June 6, 13
1925 August 13
1926 April 8, 15
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Orange Post

1913 October 23, 30

Santa Ana Blade

1913 October 20, 21, 22, 23
1915 January 11, 12, 13
1917 May 28, 29, 31

Santa Ana Leader

1902 May 23, 30

PLACER COUNTY

Colfax Sentinel

1904 April 22, 29
August 5, 12

Lincoln News–Messenger

1914 May 1, 8, 15

Newcastle News

1908 June 3*, 10
1909 March 3, 10, 17
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1914 April 30
May 7, 14

Placer County Republican (Auburn)

1908 June 4, 11
1914 April 23, 30
May 7

Placer Herald (Auburn)

1902 May 24*, 31
1908 May 30
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1909 March 6, 13
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1914 February 21, 28

Roseville Register

1908 May 30
June 6*, 13
1909 March 4, 11
June 24
July 1
1914 May 1, 8, 15

PLUMAS COUNTY

Plumas National Bulletin (Quincy)

1909 March 4, 8, 11
June 24*, 28
July 1
1910 March 10, 14, 17

RIVERSIDE COUNTY

Corona Independent

1908 July 3*, 10, 17
1910 May 17*, 20
1915 January 11, 12, 13
1917 May 28, 29, 31

Hemet News

1916 January 28
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1925 August 14, 21
1928 September 7

Riverside Daily Press

1908 July 3*, 4, 5, 6
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1916 January 24, 25, 26
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1918 June 6, 7, 8
1925 June 29*
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1926 February 18*
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1928 September 5
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Riverside Press and Horticulturist

1902 June 10, 13*, 17*, 20
1905 January 6, 13
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1906 January 5
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Sacramento Bee

1901 March 2, 4, 5
1902 May 19*, 20, 21, 22*, 23
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1903 June 11*, 12
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1904 April 16*, 18*, 19
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1909 February 15, 16, 17
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1910 August 5*, 6, 8
1914 February 18, 19*, 20*
1925 June 29*
1926 October 25
1927 February 15, 16*

Sacramento Daily Record–Union

1902 August 1*

Sacramento Union

1901 March 4*
1902 May 20*, 21, 22, 23
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1903 June 12*
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1908 May 30, 31*
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1909 February 14, 15, 16*
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1910 August 5*, 6, 7
1914 February 18, 19, 20
1925 June 30*
1926 February 15, 16
1927 February 15, 16*
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SAN BENITO COUNTY

Evening Free Lance (Hollister)

1927 February 15, 16, 17

San Juan Mission News (San Juan Bautista)

1927 February 19
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Mojave–Randsburg Record Times

1926 April 9, 16
June 29, 30

1931 April 29

Randsburg Times

1926 July 2, 9

Redlands Citrograph

1905 January 7, 14

Redlands Daily Facts

1925 August 9, 10
1926 February 18, 19
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1928 September 5*
October 3*
1931 April 23, 24

San Bernardino Evening Index

1910 November 15, 16*, 17

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1925 June 29*
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1926 February 18
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1928 September 8, 10
1931 April 23, 24

San Bernardino Free Press

1901 March 4*, 5

SAN DIEGO COUNTY

Escondido Times

1906 March 9, 16
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1907 September 20, 27*

Escondido Times–Advocate

1910 May 20*, 27
1925 August 14

San Diegan Sun (Son Diego)

1902 June 10, 11, 12
1906 March 3, 5, 6
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1907 September 20, 21, 23

San Diego Sun

1910 May 16*
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1925 August 8*
1928 September 5*
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San Diego Evening Tribune

1910 April 11, 12, 13
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1906 March 3, 4, 5*, 6, 7
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1907 September 20, 21, 22
1910 May 15, 16*
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1923 November 5, 6*, 7, 8*
1925 April 15, 16, 17
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1908 May 30
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1908 May 30, 31
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San Francisco Call and Post

1926 October 25, 26

San Francisco Chronicle

1901 March 2, 3, 4
1902 May 20*, 21, 22, 23
1903 June 11, 12*
1904 April 16*
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1910 March 10, 11, 12*
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1914 February 18, 19*, 20
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1916 November 10, 11, 12
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1925 June 30*
1926 October 25
1927 February 15, 16
1931 April 24, 25

San Francisco Examiner

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1908 May 30, 31
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1910 August 5
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Stockton Daily Record

1901 March 2, 4*
1902 May 19*
1903 June 11*, 12
August 3*
1905 December 23, 26, 27
1909 June 23*, 24
1916 January 24, 25, 26

Stockton Mail

1910 June 10, 11, 13

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Atascadero News

1916 January 29
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San Luis Obispo Daily Telegram

1910 May 16, 17
1913 October 20*, 21*, 22, 23, 25*, 26
1916 January 24, 25, 26

1925 June 30*
1926 April 3*
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San Luis Obispo Semi–Weekly Breeze

1902 July 29
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1905 December 26, 29

San Luis Obispo Telegram–Tribune

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San Luis Obispo Tribune

1902 August 1*, 8
1905 January 6, 10, 13
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1913 October 21, 24*, 28
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1927 November 18, 19, 20

The Times–Templeton (Atascadero)

1913 October 20*, 30, 31

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Redwood City Democrat

1910 March 10, 17

Redwood City Standard

1927 February 17, 24

Redwood City Times–Gazette

1902 May 24, 31
1903 June 13*, 20
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1910 March 12, 19
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San Mateo Leader

1902 May 21, 28
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1910 March 19, 17

San Mateo Times

1927 February 15, 16, 17

The Enterprise (South San Francisco)

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Santa Barbara Morning Press

1913 October 20*, 21, 22, 23
1914 November 8, 10
1916 January 23, 25, 26
1925 June 30*
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1926 February 19*
1927 November 18, 19

Santa Barbara Weekly Press

1902 July 31*
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1905 January 12, 19
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1906 January 5
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Gilroy Advocate

1913 October 25
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1927 February 20

Los Gatos Mail–News

1927 February 17, 24

Mountain View Register–Leader

1913 October 25, 31
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Palo Alto Times

1903 June 12*
August 7*
1910 March 10, 11, 12
1913 October 25, 26, 27, 28
1927 February 15, 16*

San Jose Mercury

1910 March 10, 11*, 12
1913 October 25, 26, 27

Santa Clara News

1910 March 15, 22
1913 October 28
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Evening Pajaronian (Watsonville)

1910 March 10, 12

Santa Cruz News

1910 March 10, 11*, 12

Santa Cruz Sentinel

1902 May 20, 21, 22
1903 June 11, 12*
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1910 March 10, 11*, 12
1913 October 23, 25, 26, 27, 28
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1926 October 22, 23, 24, 26*
1927 February 15, 16*

Santa Cruz Surf

1910 March 10, 17*

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Redding Courier–Free Press

1908 August 18, 19, 20
1909 May 18, 19, 20
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1910 August 5*, 6, 8
1914 February 18, 19
1915 February 22, 23
1923 January 11, 12, 13

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1904 April 16*, 18*, 19

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Mountain Messenger (Downieville)

1908 May 30
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1909 March 6*, 13
June 26*
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1914 February 21*, 28*
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Yreka Journal

1904 April 19, 26
1906 May 16*, 23
1908 November 19, 26
1909 November 3*, 10
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Dixon Tribune

1902 May 23*, 30
1908 May 30
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1909 February 20*, 27
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River News (Rio Vista)

1902 May 23*
1904 August 5*, 12
1910 June 10, 17

Solano Republican (Fairfield)

1902 May 23*, 30
1903 June 12, 19
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1904 August 5, 12
1909 February 19*, 26
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Petaluma Daily Argus

1903 June 11*
1907 September 20*

Santa Rosa Press Democrat

1902 May 20*, 21
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1903 June 11, 12, 14
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1908 November 11*
1910 March 11, 12, 13

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1910 March 10, 11, 12, 14

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Sutter County Farmer (Yuba City)

1908 June 5*, 12
1909 March 5, 12
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1914 February 20, 27

Sutter Independent (Yuba City)

1908 June 4, 11

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Red Bluff News

1904 April 22, 29

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Trinity Journal (Weaverville)

1904 April 16, 23*
1906 May 12*, 14, 16, 19
1908 August 22*, 29
1909 May 22, 29
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1910 August 6, 13

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Porterville Enterprise

1901 March 8, 15

Tulare County Times (Visalia)

1901 March 7, 14
1905 January 12*, 19
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1906 January 4

Visalia Delta

1902 May 22, 29
1905 December 23, 24, 27

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Mother Lode Magnet (Jamestown)

1908 June 3, 10

Sonora Banner

1908 June 5, 12
1914 February 20, 27

Sonora Union Democrat

1908 May 30
June 6
1909 March 6*, 13
June 26
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Oxnard Daily Courier

1905 January 6, 13
1910 May 16*, 17
December 13*, 14, 16
1914 November 9*, 10
1915 January 11, 12*, 13
1925 June 30*
1926 February 18*
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Ventura County Star

1925 June 29* (extra)
June 29*
1926 February 18*
April 3, 5
May 3*
June 29*, 30*

Ventura Free Press

1901 March 8*, 15
1902 August 1*, 8
1905 January 6, 13, 20
1913 October 24*, 31

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1908 June 5, 12
1909 June 25
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Woodland Daily Democrat

1902 May 19*, 21*
1903 June 11, 12, 13*
August 3, 4, 5
1904 July 30*
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1908 May 30
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1909 June 23, 24, 25
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Marysville Appeal

1908 June 1*, 4, 8
1909 March 4, 8*, 11
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1914 April 27, 30
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1908 May 30*
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1909 March 3*, 4, 5
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Territorial Enterprise (Virginia City)

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Morning Oregonian (Portland)

1902 July 29*
August 2*

Portland Oregonian

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